ESTABLISHED IN 1872

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With Which Is Combined

Vol. XC, No. 7 PAPER Thursday, February 13, 1930

Work Starts on Kimberly-Clark Mill Additions

One Building Will Afford Enlargement of Operating Facilities and Will Contain Super-Calenders, Cutters, Trimmers, and Rewinders—Second Unit Will Contain Two Stories and Will Be Used for Paper Storage—Wooden Buildings Razed

Institute of Paper Chemistry Starts Work

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 10, 1930.—Building operations have been started by the Kimberly-Clark Corporation, of Neenah, Wis., on two additions to the finishing room of its mill at Kimberly, Wis. These improvements are another step in the company's program of modernizing this mill in every respect. Approximately $200,000 will be spent on these units.

One of the buildings is to be 122 by 127 feet, single story, and of steel, concrete and brick. It will be an enlargement of the operating facilities, as it will contain super-calenders, cutters, trimmers and rewinders. One portion also will be devoted to locker rooms and lavatories for the employees.

There will be two stories in the second unit. It will be almost triangular in shape, 146 feet at the wide end and 225 feet long. Concrete, brick and steel are being used here also. The building will be used mainly for paper storage and will contain a five ton freight elevator for that purpose. All of these buildings will be equipped with automatic sprinklers and other safety appliances.

Contracts for these additions were awarded to Fluor Bros. Construction Company, of Oshkosh, Wis. The engineers are O'Keefe-Orbison Engineering and Construction Company, Appleton, Wis. A number of old wooden buildings were razed to make room for the new ones.

Dells Paper & Pulp Co. Changes

Changes are being made at the Dells Paper and Pulp Company, Eau Claire, Wis., to take care of new power supply arrangements. The power generating plant at the Dells dam is being tied in with the high voltage lines of the Northern States Power Company so that hereafter the current used in the paper mill can be transmitted either direct from the dam or from the power company's central station in Eau Claire. Some additional motor equipment will be installed and the wiring and power hookups changed.

These alterations followed the completion of a deal by which the Eau Claire Dells Improvement Company, the power subsidiary of the paper company, became a part of the Northern States Power Company. The merger was made so as to conserve water for power uses and effect economies in power production. The agreement included a contract by which power is furnished the paper mill under low rates to supplant the former water power operations. The improvement company had a 99-year lease with the city of Eau Claire on the power site of the Dells dam.

E. O. Brown Heads Rhinelander Paper Co.

E. O. Brown has been announced as the successor to the late Webster E. Brown as president of the Rhinelander Paper Company, Rhinelander, Wis. The latter died recently and the change in officers was effected at the annual meeting. The other officers are: A. D. Daniels, vice president; Paul Browne, secretary; Spencer Brown, assistant secretary; N. F. Becker, treasurer; Allan C. Brown, assistant treasurer. The board of directors consists of E. O. Brown, E. A. Forbes, A. D. Daniels, M. H. Raymond, Fred Anderie, Spencer Brown and Allen Brown.

Election of directors and officers also was held recently by the Brown Paper Goods Company, of Rhinelander. C. F. Brown was named president, W. D. Brown, vice president, and Spencer Brown, secretary-treasurer. These three officers constitute the board of directors.

Wisconsin Forest Conservation

Approximately 100,000 acres of land has been entered under the forest crop tax law of Wisconsin and accepted by the Wisconsin Conservation Commission. The largest entry was made by the Tomahawk Kraft Paper Company, of Tomahawk, Wis. The company has set aside 11,174 acres in Oneida county and 1,287 acres in Lincoln county for tree growing. These lands are a part of extensive forestry operations by which the mill eventually will be supplied with all the pulp wood needed for its kraft mill. The state's forestry plans are helped by a new feature of the law which permits counties to enter tax delinquent lands and use them for forestry. The crop tax law exempts timber from any tax beyond ten cents an acre until the timber is cut. An assessment is made at that time based on market value.

Establishment of national forests in Wisconsin is also progressing under the direction of W. E. Tinker, chief forester of the Lakes States district. He expects to have 60,000 acres in the Flambeau unit inspected and ready to recommend for government purchase soon. This will be one of three national forest districts, where protection will be given to growing timber and federal planting will occur on other tracts.

Institute of Paper Chemistry

Lawrence College, Appleton, Wis., has begun actual class work in the newly founded Institute of Paper Chemistry, the first of its kind to be established in the United States. Seven selected students have been enrolled and applications of several others were declined because of the lack of facilities at present to handle more.

Dr. Otto Kress, well known chemical engineer, is directing the institute and will teach four of the courses dealing in the microscopy of paper fibers, paper dyeing, paper testing and pulping processes. Dr. L. A. Youtz will conduct a course in inorganic technical

(Continued on Page 30)

Demand for Paper Is Expanding in Chicago

Usual Fluctuations and Uneven Conditions Which Characterized January Are Gradually Being Smoothed Out—News Print Market Continues Fairly Steady Despite Slight Decline in Advertising—Paper Industry Shows Some Improvement

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 10, 1930.—While January was characterized by varied grades of success Chicago paper merchants are expecting February to serve as the real indicator for spring business. The usual fluctuations and uneven condition that characterized January are already being smoothed out in the first part of February. The news print market is fairly good although instances of a slowing up in advertising are noted. The board market shows probably the best improvement of all lines, according to local representatives. The market is stronger than was expected and the next few weeks are evidently going to show a continuation of improvement. In the fine paper grades a slow start in January is being partially forgotten in early spring business. Wrapping papers, while not overly good in January, are expected to improve within the next few weeks.

National Management Congress

Chicago will again be host to the National Management Congress during the week of March 3, the headquarters to be at the Stevens Hotel. This event, which is participated in and sponsored by the Society of Industrial Engineers, the American Society of Mechanical Engineers, American Management Association, National Association of Cost Accountants and the Taylor Society, always attracts a number of paper mill executives. An item of interest to the paper industry takes place almost at the opening of the program when, on March 3, Hugh P. Baker, director of the Trade Association Division of the United States Chamber of Commerce, speaks on the "Trade Association's Opportunity in Promoting Better Management." The subject of waste elimination will be featured on the opening day with a number of well known speakers on the program.

Simplification and mechanization in the administrative field, wage plans, plant maintenance, etc., are other phases of industrial work that will be discussed. An important industrial marketing conference to be held on March 5 and 6 at the Blackstone Hotel under the auspices of the Industrial Marketing Division of the American Management Association, is also going to interest the paper industry. Included in the topics to be discussed here are "Channels of Distribution and Purchase;" "Forecasting Industrial Sales;" "Industrial Marketing Research;" "Compensating Industrial Salesmen," and "Managing Industrial Sales Force."

An industrial exposition will be held during the entire week in the Stevens Hotel, portraying a cross section of equipment, supplies and services to be found in the management and industrial fields. For particulars concerning the entire program paper mill executives are invited to write the Midwestern Engineering Exposition, Inc., 308 West Washington street, Chicago.

Bound for Paper Convention

Included in the representation of Chicago paper salesmen and merchants to the New York meetings of the American Paper and Pulp Association, the National Paper Trade Association, the Salesmen's Association and allied organizations, are a number of well known paper representatives who will be missed during the week they will be headquartering at the Pennsylvania Hotel. Among this group, which was stirred up by Jim Coy, of the Flambeau Paper Company, are the following: Harold Knott, Eastern Manufacturing Company; Walter J. Cox, Paterson Parchment Paper Company; Tom Donahue, of the Warren Manufacturing Company; Jack Burrus, of Albemarle Paper Company; Tom Willis, of Willis & Weber, Kansas City; J. H. Cowgill, Tomahawk Kraft Paper Company; L. C. Ferris and A. C. Remley, of the Paton Paper Company; Bob Donnelly, of the Central Wax Paper Company; Walter Daley, of the Port Huron Sulphite Paper Company; Chris Phipps, of the Wautab Pulp and Paper Company; Messrs. Gardner, Croy and Smith, of the Menasha Carton Company; and Messrs. Wesley and Becker, of the Rhinelander Paper Company.

Jacob Seibert Co. Formed

Jacob Seibert, well known paper merchant and mill representative, is now located at 228 North LaSalle street, Chicago, having moved from his old location at 30 North LaSalle street in January. Mr. Seibert has also changed the name of his organization, the "Seibert Paper Company" being dropped for the "Jacob Seibert Company." The new telephone is Franklin 3399. Mr. Seibert's most recent connection was with the International Paper Company, kraft division, from which he resigned a few months ago. He took a vacation in California and then returned to Chicago to open up his new office. According to Mr. Seibert he is not yet ready to announce his plans relative to mill representation. He has, however, long been identified with the kraft interests and he is expected to again become associated with that field. Mr. Seibert's former office manager, Miss N. I. Ryan, has also resigned from the International Paper Company, and is now office manager of the new Jacob Seibert Company.

News of the Trade

The Menasha Products Company, Division of the Marathon Paper Mills, recently moved a large part of its routine office force back to Menasha. This routine division of the organization which includes invoicing, credits, etc., has been located in the Wrigley Building, Chicago, for two years. The Menasha Products Company will continue its sales force in the Wrigley Building, operating with more than fifty employees. The removal of the office division back to Menasha has permitted the reduction of the floor space to about one half of its original size.

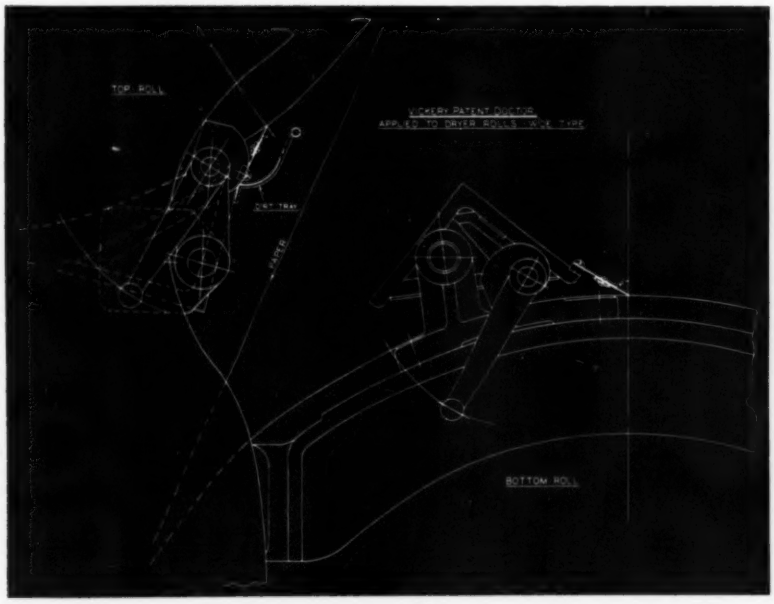
The Seaman Paper Company is featuring another advertising piece sent out by the manufacturers of Laurentian Deckle Edge paper, the Reading Paper Mills. The folder is printed on Laurentian Blue and describes the paper as well as illustrating its use. Included is a smaller booklet discussing the French Renaissance Period with reference to architecture, fashions, art, types and borders, etc.

Favorable comments are being made on the advertising of Essex Super Finish Book Paper recently sent out by Bermingham & Prosser. The folder makes use of actual advertisements to set forth its useful qualities of reproduction, folding, strength and adaptability. The paper is described as uniform in thickness and finish and with an excellent printing service. Essex book paper is carried by Bermingham & Prosser in all standard sizes and weights.

The Flexible Steel Lacing Company, of Chicago, announces the appointment of A. T. H. Taylor, formerly branch manager, Timmins, Ontario, for the George Taylor Hardware, Ltd., as their Canadian sales representative to fill vacancy caused by the death of their E. A. Rudin. Mr. Taylor's address will be 161 Glendale avenue, Toronto, Canada.

On dryers VICKERY DOCTORS improve paper finish.... save steam

Vickery Doctors keep dryer surfaces clean and highly polished, with the lightest possible pressure. The result is quick, efficient drying, and more uniform paper finish. ¶ Vickery Doctors are completely automatic; once installed, they do a 100% job without any adjustments whatever. ¶ Try one, at our expense.



BIRD MACHINE COMPANY
SOUTH WALPOLE ◆ MASSACHUSETTS

3665

Paper Demand Fairly Active In Philadelphia

Although Kraft Price Situation Has Proved Disturbing Factor, Present Conditions Are Believed Only Temporary, In Some Quarters—Keen Competition Experienced for Fine Paper Orders—Production Maintained In Fairly Satisfactory Volume

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 10, 1930.—While the Philadelphia paper trade is engaged in a certain degree of activity the opening days of the month were not satisfactory in view of the tendency of consumers to hold off purchases rather than to risk stocking in any sizable quantities at this time. The distributors are looking forward to materialization of sales as soon as consumers are assured that prices will not sag and that paper trading is fairly well stabilized.

The kraft situation is disturbing, as the trade finds it difficult to establish a standardized quotation in view of competitive bidding for orders and the adjustment of mill prices that were made in the latter part of January. However, present factors are believed to be but temporary and far sighted dealers are stocking at the present attractive prices, that will give ample margins for profit.

Fine paper trading is highly competitive with distributors vieing with mill representatives and wholesalers in stimulating business. The seasonal changes which will shortly take place will aid materially in stimulating sales of fine paper as the advertising and printing industries normally expand operations with the advent of Easter and preparation for greater industrial activity. Lower priced papers are less active. Mills report broader operations in high grade papers rather than in the cheaper lines of book papers, writings, announcements and book covers. Manufacturers of fine paper report from 75 to 90 per cent of schedule production althought a few state they are running full time.

Cellophane Popular

Cellophane specialties, such as bags and combination cellophane and paper wraps, are more in demand than the standard lines and the large manufacturers of these bags, such as Thomas M. Royal & Co., 7th and Grange streets, are obliged to operate on night and day schedule to keep up with orders that are now placed and growing demands. The Royal company has been developing this market extensively and has patented its own line of cellophane faced bags with great expansion in the types and uses for these products. Its business in the last year mounted considerably. Last month there was a further increase in business, which necessitated continued 24 hour operations. John M. Driver, who for the past decade has been head of the John M. Driver Company, 57th street and Lancaster avenue, is now superintendent of the Thomas M. Royal & Co. plant, his association with the company bearing his name having been relinquished.

John M. Driver Co., In Receivership Sale

The former business of John M. Driver & Co., with large glassine and cellophane bag and wrapper plant at 57th street and Lancaster avenue, is being sold under arrangements with an equity receivership which has been conducting the business for several months. Official announcement of the voluntary receivership was made in January when the business was placed under management of William F. Morlok, representing the Aldine Trust Company, as co-receiver with John M. Driver, president of the company, for the purpose of disposing of the assets under profitable arrangements. While the Driver company has been enjoying a fair share of business, it has been making rapid plant developments requiring much capital for equipment for the manufacture of glassine wrappers, bags and cellophane allied products. The company put up its own building, an extensive plant of considerable area and mechanical units.

Joint Account Wood Pulp Shipments

Equitable division of cargoes, designation of loading ports, stabilization of ocean freight rates, and the elimination of paralleling services, are the aims of the principal steamship lines engaged in carrying wood pulp between the Baltic ports and Philadelphia, according to a new agreement approved by the Shipping Board. In some instances the cargoes will be booked for the joint account of all lines, parties to the agreement. This agreement was made between American Scantic Lines, Inc.; and Rederiaktiebolegat Transatlantic (Transatlantic Steamship Company, Ltd.), Svenska-Amerika-Linien (Swedish American Line), Svenska-Amerika-Mexico Linien (Swedish American Mexico Line), Den Norska Amerika-linie (The Norwegian-American Line), Wilh. Wilhelmsen (Wilhelmsen Line) and the Det Forenede Dampskibs Selskab (Scandinavian-American Line). The proposed agreement is to be effective for a period of one year and began last month and will terminate December 31, 1930. It provides that during that period the American Scantic Line and the three Swedish lines—The Swedish American Line, Swedish-America-Mexico Line and the Transatlantic Steamship Company, Ltd.—shall book all wood pulp from districts known as Hornefors, Husum, Obbola, Domsjo, Skutskar, Sundsvall and Gedfle for joint account and shall apportion same approximately one-third to the American line and two-thirds to the Swedish lines. During January, February and March, and the first half of April, all wood pulp shipped from ports of Stockholm and Gothenberg is to be apportioned equally between the American line and the three Swedish lines. All Norwegian wood pulp is to be reserved for the remaining three lines participating in the agreement, the Norwegian-American Line, Wilhelmsen Line and the Scandinavian-American Line. Further provision is made for the maintenance of reasonable minimum rates on wood pulp as agreed upon from time to time. The purpose of the agreement is stated to be to eliminate unnecessary expense through paralleling of services and to provide a more nearly uniform and adequate freight rate. The American Scantic Line is owned and operated by Moore and McCormack, Inc., while the Transatlantic Steamship Company, Swedish-American Line, Swedish-America-Mexico Lines, Norwegian-American Line and Wilhelmsen Line are represented in Philadelphia by J. A. McCarthy, S. L. Burgess & Co. representing the Scandinavian-American Line.

Barrett Co. To Rebuild Damaged Structure

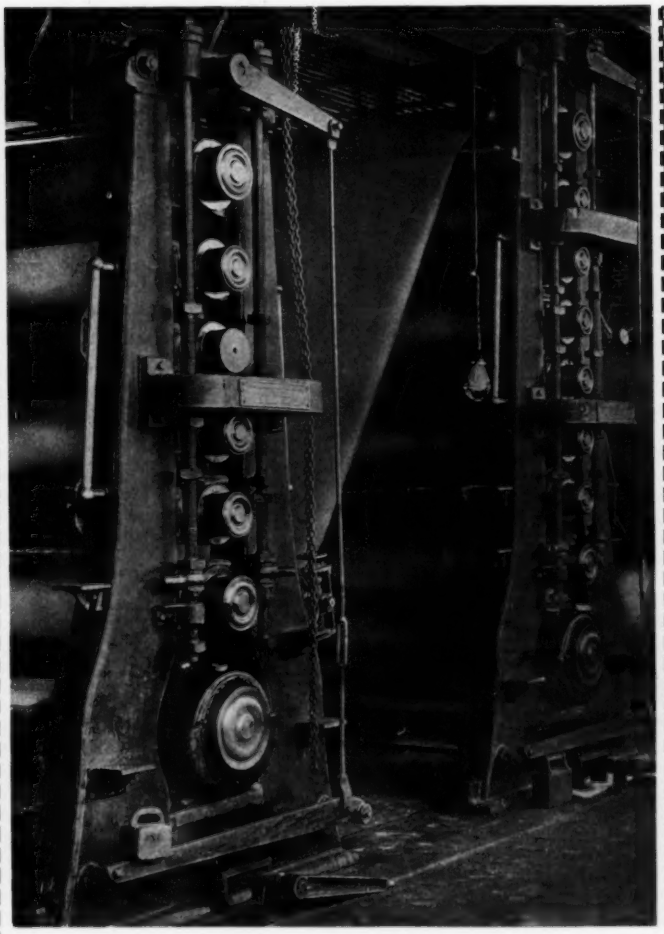
The Barrett Company, manufacturers of roofings and tar products will erect a three story structure of steel and concrete to replace the chemical treating building for dried and builders papers this spring, plans for the structure now being submitted to the firm. The new building will be erected at a cost of $100,000, and will be constructed on the site of the former building destroyed by fire in December on its Grey's Ferry avenue grounds.

R. H. Anderson Elected President of Bear Canyon Co.

Robert H. Anderson, vice president of the Keasby & Mattison Company, of Ambler, Pa., manufacturers of asbestos products, was elected president of the Bear Canyon Asbestos Company by the Board of Directors. He is an expert on asbestos crudes and fibers and recently bought interest in the Bear Canyon Company.

Theodore Adams Supervising Piqua Strawboard Co.

Following the sudden death of J. F. Chism, manager of the Philadelphia offices of the Piqua Strawboard Company of Piqua, Ohio, in late December, the Quaker City branch offices are now under supervision of Theodore Adams, manager of the Chicago headquarters of the company. Miss Mildred Wilkie is in charge of the offices pending the appointment of a successor to the late manager. Mr. Chism passed away suddenly December 30 at his home from an acute attack of indigestion that affected the heart.



ACCESSIBILITY

We build Calenders in all sizes, with hand, electric or hydraulic lift. They are fully described in our new Bulletin 106. Send for it today and when in the market for new equipment, remember we build all kinds of paper mill machinery.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.

He was 69 years of age. He was manager of the Eastern district of the Piqua Strawboard Company, which included the Atlantic Seaboard States with central offices in this city in the Drexel Building. Manager Adams, of the Chicago office, is making periodical trips to the Quaker City supervising the local business until further action is taken on the appointment of a local representative.

J. E. Blosser With International Paper Co.

J. E. Blosser, who for several years has been mill manager for the Scott Paper Company, of Chester, Pa., has joined the forces of the International Paper Company in New York. His duties as mill manager have been taken over by John Lobb, who for a while was in charge of the Dill & Collins Mills recently operated by the Scott Company pending the completion of the erection of its new paper machines in the Chester plant.

Grellet N. Collins Joins International

Another local trade associate now affiliated with the International Paper Company is Grellet N. Collins, former vice president of the Dill & Collins Company, who resigned his membership in the local manufacturing concern to join the Bryant Paper Company as production manager. The younger Collins, son of President Grellet Collins, of the Dill & Collins Company, is now connected with the International Company in an executive capacity, working with E. A. Charlton, vice president and general manager of that concern, in the development of the book and bond paper mills.

National Waterproofing Co. Has New Mill Wrap

The National Waterproofing Company, with plant in Camden, N. J., and sales and executive offices in the Drexel Building, occupying Suite 1054-56, is placing on the market an excellent mill wrap, of waterproofed, strong and pliable qualities. The newest mill wrap is the National Olive Green Waterproof Mill Wrap and is designed to economize in the use of two kinds of papers. It is furnished in standard colors and all mill sizes in rolls or in sheets.

New Open Side Envelope for Charles J. Cohen Co.

Entirely new lines of open side postage-saver envedopes are now being produced by the old established firm of envelope manufacturers, the Charles J. Cohen Company, 5th and Ludlow streets. The new envelopes have been added to the white card and bank envelopes and augment the regular stocks. The new style envelopes added this year to the Zenith brand are postage savers with side opening which permits use of second class postage rates. When sealed it has the appearance of regular envelopes although allowing for opening and inspection by postal authorities.

Cherry River Paper Co. Starts Good Year

Just returned from a trip to the Richwood, Va., mills of the Cherry River Paper Company and a swing around the Western distributors, Clark H. Morian, vice-president and general sales manager of the company, with offices in the Pennsylvania Building, reports a very bright outlook for the manufacturers. The Richwood mills are running full on bleached and unbleached sulphite specialties and initial orders for the 1930 season have been of goodly proportions, enabling full schedule of production.

W. H. McKeever Succeeds J. D. Ellis in Hammersly Mfg. Co.

Following the resignation of J. D. Ellis from the management of the Philadelphia offices of the Hammersley Manufacturing Company, W. H. McKeever has been appointed his successor in the Quaker City trade. The new manager will continue to represent the Hammersley's line of waxed papers and waxed papers made by the Paterson Parchment Company, with offices in the Drexel Building. Mr. McKeever has been assisting Mr. Ellis in the local territory.

Sylvester S. Garrett Out of Hospital

With his eye sight much improved by the operation recently undergone at a local hospital, Sylvester S. Garrett, head of the firm bearing his name, after a brief rest at his home, is back at his desk at headquarters of his wrapping papers business at 259 South 3rd street. His former manager, A. Clarence Holland will return to the Wills Eye Hospital for another operation for the removal of cataract following a preliminary surgical treatment a fortnight ago.

Simon Walter Sailing South

President Simon Walter, of E. Walter, Inc., 145 North 5th street, left last week for a cruise in the Antilles, making a fortnight stay at Havana and then returning homeward in early March.

William M. Pringle Sails For Europe

A tour of the world is to be the itinerary of William M. Pringle, vice president and general manager of the Philadelphia offices of the Seaman Paper Company, with offices in the Atlantic Building, who sailed for Europe last month. He will remain abroad indefinitely.

Deerfield Glassine Co. Busy

The plant of the Deerfield Glassine Company at Monroe Bridge, Massachusetts, is running to full capacity (over a carload a day) on the two main products of this organization, viz., "Plateglassine," the transparent glassine, and "Glassite," the economical glassine.

Early in December the interests of William G. Shortess were acquired by George M. Seaman of the Seaman Paper Company. The Seaman interests are represented on the board of directors by Joseph Poole, who has been elected secretary of the company. William L. Ross, who has been treasurer since the organization of the Deerfield Glassine Company, was elected vice-president to succeed Mr. Shortess. Joseph H. Wallace continues as president of the company.

The directors authorized extensive developments looking to quality production of the products that have found a ready sale during the past year.

The Seaman organization brings to the company a wide experience in the paper business. The interests of Wm. L. Ross & Co. of Chicago, and Whitaker & Co. of St. Louis, investment bankers, continue as heretofore.

The plant at Monroe Bridge is a two machine plant producing over a carload a day, with the best machinery that can be obtained. It is equipped with a complete laboratory for testing material before and during process of manufacture, and a complete testing equipment for the determination of the character of the products, and comparison with those of other manufacturers.

A booklet showing samples of the products of the Deerfield Glassine Company has just been issued and is obtainable at the Sales Office, 5 Beekman street, New York City.

Cornell Wood Products Co.'s Safety Record

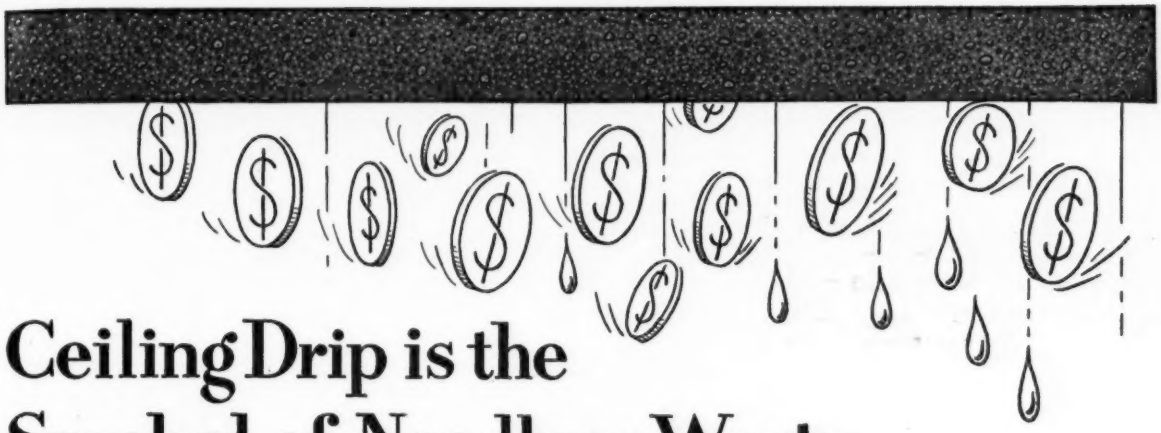
The Cornell Wood Products Company, Cornell, Wis., made an unusually good safety record during the year just closed. The company finished the year 1929 with six "no accident months" and with but 13 "lost time"accidents with an average working crew of 300 employees. The following tables furnished by R. I. Dickinson, safety director, show the safety work accomplished since 1924.

RECAPITULATION OF MILL ACCIDENTS
JANUARY, 1930

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1924	5	9	16	16	17	6	9	12	18	11	14	14
1925	16	15	16	12	11	7	9	7	1	8	3	0
1926	5	2	4	5	3	3	1	1	8	0	8	0
1927	4	5	4	4	4	4	9	9	5	8	6	0
1928	4	2	4	5	5	1	3	4	3	4	3	0
1929	4	0	1	0	3	0	3	0	0	0	1	1
1930	0											

Year	Total yr.	Ave. per mo.	Ave. per wk.
1924	147 accidents	12.2	2.82
1925	105 accidents	8.7	2.02
1926	40 accidents	3.3	.77
1927	62 accidents	5.0	1.06
1928	38 accidents	3.0	.73
1929	13 accidents	1.0	.25
1930	0 accidents	0.0	.00

Year	No. acc. reported	Compensation cases	Lost time cases	Total days lost	Accumulated days lost time
1924	147	56	87	1704	....
1925	105	46	71	1502	....
1926	40	24	32	535	....
1927	62	22	39	783	....
1928	38	17	23	8075	....
1929	13	9	13	329	....
1930—Jan.	0	0	0	0	0



Ceiling Drip is the Symbol of Needless Waste

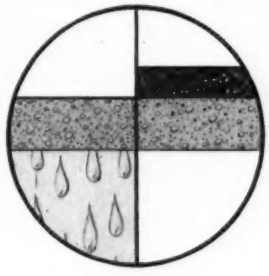
Every drop of condensation costs money Corkboard insulation checks this waste

HEAT escaping through the roof leaves a cold ceiling behind. Moisture condenses and you have ceiling drip. Every drop means waste.

Picture dollars dropping from your ceiling, damaging paper, and then slipping out to the nearest drain. From the standpoint of your profit and loss account that is a fair picture of ceiling drip.

To put an end to this waste stop the costly heat leak that causes it. Adequate insulation is the way.

Armstrong's Corkboard Insulation on the roof of your mill will keep heat in and thereby check condensation. It will add years of life to the roof deck by preventing rot. It will save many fuel dollars in winter heating.



Armstrong's Corkboard on the roof of your mill will effectively check ceiling drip and its accompanying waste.

This efficient insulating material gives you the greatest insulation value per dollar of cost. It is made in such thicknesses that adequate insulation can be laid in a single layer. It is easily and quickly applied on old or new roofs.

Let Armstrong engineers submit estimates. Without obligation, they will tell you what thickness of corkboard will give you correct protection for your operating conditions in each part of your plant. Write for the 36-page book "The Insulation of Roofs to Prevent Condensation" to the Armstrong Cork & Insulation Company, 904 Concord St., Lancaster, Pa.; or to either of the Canadian Branch offices, 1001 McGill Bldg., Montreal, Quebec; 11 Brant Street, Toronto, 2 Ontario, Canada.

Armstrong's Corkboard Insulation

For the Roofs of All Buildings

Paperboard Industries Association Meets

Meetings of the Paperboard Industries Association were held at the Drake Hotel, Chicago, January 21, 22 and 23. Meetings of the Standing and Executive Committees were held on January 21; the Folding Box and Paperboard Groups met on the 22nd, and the Container Group Meeting, and the General Meeting of the Association, including the Trade Practice Division, were held on the 23rd. All sessions were unusually well attended.

Folding Box Group Meeting

The Folding Box Group Meeting was held Wednesday morning, January 22, with George W. Gair presiding as chairman.

A complete report was submitted at this meeting covering the work carried on under the direction of the Sales Promotion Committee in extending the use of folding boxes. This report, copy of which has been forwarded to each member, indicates conclusively that substantial progress is being made in extending the use of folding boxes, particularly in new fields.

The meeting directed that certain steps be taken looking to size standardization for folding boxes for the packaging of specific articles.

In connection with Statistical-Accounting subjects, the following items were reported upon and discussed:

1. Folding Box Estimating Manual, prepared by Paperboard Industries Association.
2. Financial Questionnaire and Summary, showing operations in 1929 from the standpoint of Profit and Loss.
3. Statistical Charts showing operations in the industry.
4. Census of the Industry.

Chairman Gair made some most interesting and constructive statements in which he urged that each executive give serious consideration to the real problems of the industry.

Paperboard Group Meeting

Members of the Paper Board Group met Wednesday, January 22, Vice-President Henry D. Schmidt presiding.

Vice-President's Report

Vice-President Schmidt submitted a report in which he urged members to participate wholeheartedly in the discussions at meetings and to make suggestions for subjects to be included in future programs. The complete report, which was well received, is included in the minutes of the meeting.

Remarks of Westbrook Steele of Lawrence College

Westbrook Steele, of Lawrence College, Appleton, Wis., explained a course now available at Lawrence College, which has been inaugurated for the purpose of studying the problems of the Paper Industry.

At the conclusion of Mr. Steele's remarks, Vice-President Schmidt stated that he had heard many favorable comments regarding Lawrence College, and he urged that paper board manufacturers direct to the College any who might advantageously take the course.

White Water Utilization in Board Mills

C. M. Baker, Engineer, American Paper and Pulp Association, with headquarters at Madison, Wis., addressed the meeting on the subject of "White Water Utilization as Applied to Board Mills." He stressed the fact that the mill operator may solve the stream pollution problem by the utilization of waste, to his net financial advantage.

Mr. Baker's remarks were well received and members indicated considerable interest in his constructive suggestions.

Other Subjects

Among other important subjects reported upon and discussed at the meeting were the following:

1. Eliminating the Manufacture and Use of Inferior Container Boards.
2. Standardization of Micrometers.
3. Report of Committee on Cooperation with Kraft Liner Manufacturers.
4. Statistical-Accounting Subjects, including:
   (a) Census of the Paper Board Industry.
   (b) Survey showing Box Board Manufacturing Capacity, subdivided by zones, with details as to machines added and dismantled; jute liner capacity, kraft liner capacity, etc.; yearly growth of the industry, etc.
   (c) Financial Questionnaire and Summary.
   (d) Accounting Service to Members.

Container Group Meeting

The Container Group Meeting was held Thursday morning, January 23, commencing at 9:30 A.M., exactly on time, with J. H. Macleod, Group Vice-President, presiding.

Extending Use of Corrugated Boxes

Sales Promotion Representative Luhrs reported in detail regarding the work carried on during the past 60 days in extending the use of corrugated and solid fiber boxes. Research work is being carried on to develop the proper containers for use in these new fields and extensive trial shipments, storage tests, etc. are being made to develop the facts as to the types of boxes adapted for the handling of the particular article.

Statistical-Accounting Subjects

Mr. Grafton Whiting, Statistician-Accountant reported in detail for the Statistical-Accounting Committee, covering the following subjects:

1. Container Production Comparison, 1928-1929 with comparative values in dollars and cents.
2. Mergers in the Container Industry.
3. Financial Questionnaire and Summary.
4. Container Group Charts.
5. Cost Work Performed at Container Plants.

Standardization Committee's Report

Chairman R. H. Dollison reported for the Standardization Committee, transmitting the recommendations of the Committee regarding proposed changes in the specifications for Wooden Frame Solid Fibreboard boxes.

Invitation to Kraft Liner Manufacturers

A full discussion took place with regard to the action of the Group at the September 1929 Meeting, at which meeting the Group unanimously voted to extend an invitation to the kraft liner manufacturers to become members of the Paperboard Industries Association.

General Manager's Report

General Manager Browder submitted a comprehensive report in which he reviewed important changes recently made in the carriers' specifications, the effect of which is to authorize the use of corrugated and solid fibre boxes in certain fields not heretofore available to the fibre container industry. By reason of these reports and bulletins which are currently issued, members are promptly informed regarding all changes which are proposed or made effective and are thus fortified with knowledge which is of great importance to their present and prospective customers.

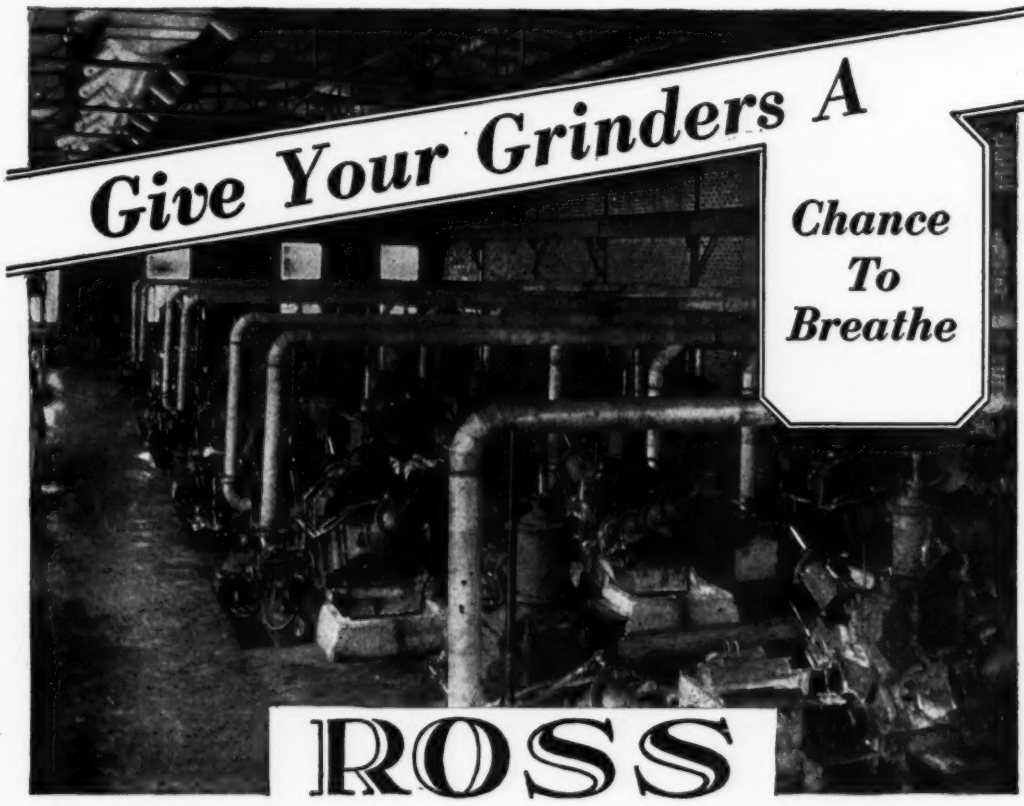
Remarks of Vice-President Macleod

Just prior to adjournment, Vice-President Macleod made an inspiring talk in which he stressed the desirability and necessity for wholehearted and unselfish cooperation on the part of each and ever member of the Group.

He reported that he is endeavoring to have a nationally known man, an economist and banker, address the March Meeting of the Container Group, and that the members of the Paperboard and Folding Box Group will be invited to hear the address.

General Meeting

The General Meeting was held Thursday afternoon with Mr.



Grinder Exhaust Systems

The fog and cold during winter months and also the steam and oppressive heat of summer—blankets of blinding vapor. These are dangerous and costly conditions that can now be completely overcome by means of the Ross Grinder Exhaust Systems. They give both pocket and magazine grinders a chance to breathe.

The Ross Grinder Exhaust System cures the fog nuisance—at its source—in the grinder casing. The system is low in first cost and operating cost. Installation and operation is remarkably simple. It cannot fail to assure greatly improved working conditions, increased output with substantial reduction of steam and power costs.

Our Bulletin No. 14 completely describes this exhaust system, explaining its principle and results being attained from its operation in many prominent mills. A copy is yours for the asking.

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ROSS ENGINEERING OF CANADA, LIMITED

NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

Hugh Strange, the President elected at the November (Annual) Meeting, presiding.

Executive Committee's Report

President Strange submitted the report of the Executive Committee covering recommendations and action taken by the Committee at two meetings, one which was held in New York City on November 21, 1929, and the other which was held in Chicago on January 21, 1930. Among the subjects reported upon were the following:

1. Appointment of Staff Members as follows:
   General Manager & Treasurer, G. R. Browder.
   Statistician-Accountant, Grafton Whiting.
   Secretary, H. S. Adler.
2. Schedule of Meetings for 1930.
3. Budget for first half of 1930.
4. Appointment of the following to represent the Association in its relations with the Chamber of Commerce of the U. S. A.:
   Mr. Hugh Strange (President of the Association.)
   Mr. J. J. Brossard (National Councillor.)
5. Dues Basis for first half of 1930.
6. Finances.
7. Action to be taken regarding members in arrears in payment of Dues.
8. Arrangement covering services of Gilbert H. Montague as Counsel, Trade Practice Division.

Election of Members

The following companies were unanimously elected and welcomed to membership in the Container Group: Delavan Corrugated Box, Inc., Syracuse, N. Y., Container; Gaylord Container Company, Atlanta, Ga., Container; Pomeroy-Schofield Company, Chicago, Ill., Container.

Standing Committees for Ensuing Year

President Strange, with the approval of the Executive Committee, announced the appointment of the following members of the Standing Committees for the ensuing year, to serve through the January, 1931 meeting; namely—

Sales Promotion Committee

H. C. Stevenson, The Rochester Folding Box Co., Rochester, N. Y., Chairman.

J. M. Arndt, Robert Gaylord, Inc., St. Louis, Mo., Container.

E. T. Gereke, Gereke-Allen Carton Company, St. Louis, Mo., Folding Box.

T. H. Goodspeed, American Box Board Company, Grand Rapids, Mich., Folding Box.

Irving Hill, Lawrence Paper Manufacturing Company, Lawrence, Kans., Container.

J. P. Hummel, Hummel-Ross Fibre Corporation, Hopewell, Va., Paperboard.

A. R. Kohl, Owens-Illinois Glass Company, Toledo, O., Container.

T. C. Mitchell, Federal Container Company, Philadelphia, Pa., Container.

C. L. Wood, River Raisin Paper Company, Monroe, Mich., Paperboard.

J. L. Barchard, Hummel & Downing Company, Milwaukee, Wis., Folding Box.

H. H. Stonebarger, The Globe Folding Box Company, Cincinnati, Ohio, Folding Box.

Standardization Committee

G. W. Gair, Robert Gair Company, New York, N. Y., Chairman.

R. H. Dollison, Fairmont Box Company, Fairmont, W. Va., Container.

Isidor Etra, Star Corrugated Box Company, Inc., Maspeth, L. I., N. Y., Container.

E. R. Hankins, Container Corporation of America, Chicago, Ill., Paperboard.

K. I. Herman, Auglaize Box Board Company, Dayton, Ohio, Paperboard.

C. C. Kennedy, Sutherland Paper Company, Kalamazoo, Mich., Folding Box.

Statistical-Accounting Committee

C. W. Gaylord, Robert Gaylord, Inc., St. Louis, Mo., Chairman.

C. H. Andrews, Bird & Son, Inc., East Walpole, Mass., Container.

H. D. Cornwall, The Pa Pro Company, Glenfield, N. Y., Container.

P. F. Gaffney, Densen Carton Company, New York, N. Y., Folding Box.

J. J. Gannon, The Ohio Boxboard Company, Rittman, Ohio, Paperboard.

J. S. Miller, New Haven Pulp and Board Company, New Haven, Conn., Paperboard.

Irving Randall, Chicago Label and Box Company, Chicago, Ill., Folding Box.

Trade Customs & Practices Committee

J. F. Sickman, Ontonagon Fibre Company, Ontonagon, Mich., Chairman.

W. M. Dixon, Sefton Container Corporation, Chicago, Ill., Folding Box.

W. R. Harris, Monroe Paper Products Company, Monroe, Mich., Paperboard.

Samuel Kipnis, National Container Corporation, Long Island City, N. Y., Container.

F. J. Kress, F. J. Kress Box Company, Pittsburgh, Pa., Container.

M. M. Madson, C. F. Downey Box Company, N. Kansas City, Mo., Container.

G. G. Otto, The Eddy Paper Corporation, Three Rivers, Mich., Paperboard.

H. L. Rauch, Consolidated Paper Company, Monroe, Mich., Folding Box.

Trade Practice Division

President Hugh Strange turned the meeting over to the Trade Practice Division, and Sidney Frochman, Chairman, Board of Directors, Trade Practice Division, presided during the consideration of the trade practice subjects.

Trade Practice Administrator's Report

I. W. McLean, Administrator, submitted a report covering his activities during the past 60 days, a copy of which report is attached to the minutes of the meeting.

Remarks of Gilbert H. Montague

Following his introduction by Chairman Frohman, Mr. Gilbert H. Montague, Counsel, outlined in considerable detail just what has been accomplished in bringing about stabilization in such major industries as Steel, Copper, Oil and Anthracite. He analyzed the progress made by these strong industries and contrasted them with the paperbroad, container and folding box industries. He made certain suggestions as to how stabilization may be had by the paperboard industry, all of which was received with interest.

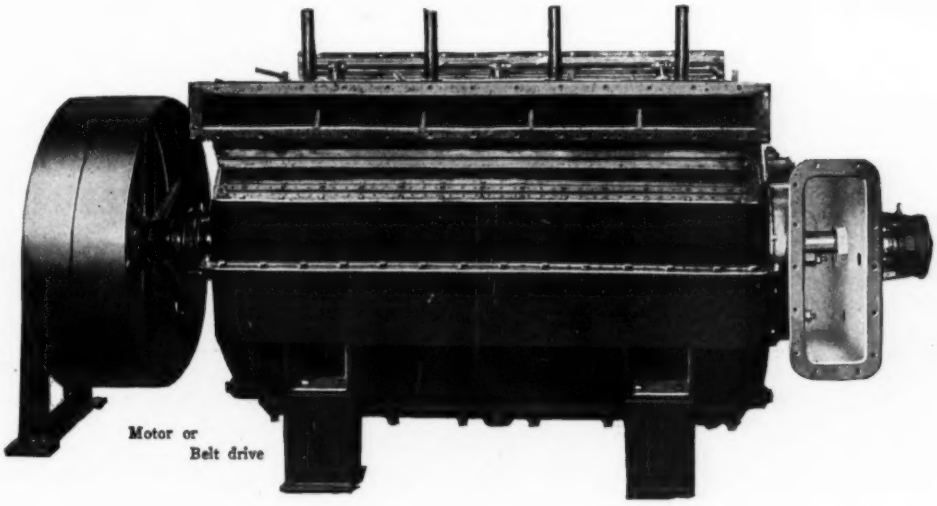
Following his remarks, a general discussion ensued and Mr. Montague answered a number of questions which were propounded by the membership.

Next Meetings

The next meetings of the Association will be held at the Commodore Hotel, New York City, March 25, 26 and 27, 1930.

William Sigler Weds Rose Jellis

ITHACA, N. Y., February 10, 1930.—Mrs. Rose Jellis of Syracuse, N. Y., became the bride of William Sigler, of Ithaca, January 27, at the First Baptist Church. Mrs. F. B. Turo, of Ithaca acted as maid of honor and R. V. Parent was best man. Mr. Sigler is a beater engineer and color expert at the Read Paper Company. He has held this position for twenty years. R. V. Parent is a machine tender at the same mill. After a brief honeymoon through the New England states, Mr. and Mrs. Sigler will be at home to their friends after February 15.



IF WE CAN PROVE...

Certainly now is a time when every penny saved in production counts more than ever before. But wise manufacturers are sensing the real, money-saving advantages of replacing their obsolete, profit-devouring machines with modern, profit-paying equipment.

that the Valley-Thune Rotary Screen can screen sulphite and sulphate pulp thoroughly *clean*—and do it consistently . . . .

wouldn't you become interested at once?

Of course! Because you already know the many natural advantages of rotary type screening, such as lower maintenance cost . . . . less power . . . . less floor space . . . . elimination of leakage and overflow . . . . quieter operation . . . . and greater capacity . . . . features which mean a decided reduction in screening costs.

In order to prove to you that the Valley-Thune Rotary Screen has all the above inherent advantages—*plus the ability to turn out clean pulp*—we have merely to refer you to the successful work being done by all present installations.

We shall welcome the opportunity to furnish you with any information you may want. Address your inquiry to the Valley Iron Works Co., Appleton, Wisconsin.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada.

WORK STARTS ON KIMBERLY-CLARK MILL ADDITIONS

Continued from Page 19

analysis, and Dr. Stephen Darling a course in the chemistry of cellulose. The physical properties and structure of wood and plants will be taught by Professor W. E. Rogers. Still another course in technical German will be offered by Dr. G. C. Cast. One of the most unique and valuable courses in the field of paper manufacture is that of "abstracts and bibliographies." It deals with the material available for research in the realm of pulp and paper chemistry. Miss Hjordes Roseth, institute librarian and expert bibliophile, has been brought from Norway to teach this unusual course. She has had experience in the Norwegian and Canadian paper industries before coming here.

Gifts from paper mills totalling $300,000 made the institute possible, and donations of $15,000 were given in addition to purchase of a suitable library. The latest gift is $2,000 from the Beloit Iron Works, of Beloit, Wis.

Freight Rates to Wisconsin Points

Attempts of the United Paper Board Company to lower freight rates to Wisconsin points are being met with opposition from the Ann Arbor railroad. The latter has asked the Interstate Commerce Commission to permit no further oral arguments and dismiss the case. This action followed recommendations of C. W. Griffin, examiner for the commission, that rates on paper be lowered on shipments from Urbana, Ill., and Wabash, Ind., to Madison, Wis., and intermediate points, to the Fox River group and the Northern Wisconsin group. He recommended that no changes be made in rates to Chicago, Milwaukee and other west bank Lake Michigan ports and to Eau Claire. The examiner also recommended payment of reparations for past shipments on which rates exceeded the lowered rates recommended in his report. The paper board company asked even lower rates.

Fox River Valley Safety Conference

The date of June 4, 1930, has been set for the annual congress of the Fox River Valley Safety Conference, which will be held at Green Bay this year. Preparations are being made for an attendance of 1,500 from various paper mills and other industries of the valley. H. D. Banta, of the Hoberg Paper and Fibre Company Green Bay, has been appointed chairman of the paper and pulp section of the congress. The Green Bay safety council is making plans to hold a city wide safety parade the same day. A program of community safety has been adopted as an activity of the valley conference and all cities will participate. One of these meetings was held at Green Bay last week with Samuel H. Reid, of the Bureau of Safety, Inc., Chicago, as the speaker. There was an attendance of 650 persons. P. J. Timmerman, mill manager of the Northern Paper Mills, presided. The address was broadcast from radio station WHBY.

News of the Industry

George W. Mead, president of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., has purchased an elaborate winter home at Miami Beach, Fla. He has wintered there frequently during the last fourteen years.

A brief shut down was necessary at the Wisconsin Tissue Mills, Menasha, Wis., because of the breaking of several pulleys on the main shaft. New parts had to be ordered. No injuries occurred when the break took place.

Dr. C. O. Sappington, head of the industrial health bureau of the National Safety Council, Chicago, spent two days last week inspecting the mill of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.

F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, Neenah, Wis., has been re-elected a director of the Winnegamie Land Company, owners of the Butte des Morts Golf Club. Harry Price, secretary-treasurer, and F. E. Sensenbrenner, assistant secretary, of the Kimberly-Clark Corporation, were elected directors of the golf club.

The Pratt Paper Company, Des Moines, Iowa, and the Allman-Christiansen Paper Company, of Milwaukee, Wis., have been added to the Riverside Paper Corporation's list of distributors for their Colonel Bond line.

The death of Matthew O. Kalous occurred at Oshkosh, Wis., last week. He formerly was manager of the Faust Paper Box Company of that city. William Hehring, of Appleton, Wis., also died last week. He was employed by the Kimberly-Clark Corporation for more than thirty years, and was a millwright at the time of his recent resignation.

Paper Men Speak at Foreman's Meeting

DAYTON, Ohio, February 10, 1930.—Several leaders in industry spoke recently at the meeting of the Middletown Foreman's Club, held at the Manchester hotel. They were J. A. Aull, president of the Sorg-Oglesby-Smith Paper Company; Z. W. Ranck, president of the Crystal Tissue Company, and R. G. Adair, supervisor of safety of the Armco and S. R. Recranus, acting works manager of the same concern.

All discussed a single subject, "The Foreman's Responsibility to the Management." The speakers being in an executive position spoke authoritatively and the various mill and factory foremen being in a receptive mood, heard many pointers.

Mr. Aull urged the men to "saturate themselves with the business you are in so that you answer 'yes' or 'no' to questions about the business. A foreman is a link in the chain of accomplishment by man, he stated. The other links are the men from president on down for each is trying to do something for their departments."

Mr. Ranck stated that every management "knows that success depends on team work and love of the game."

"When I see men working efficiently I know it depends on good leadership and you men are the leaders," he asserted.

He enumerated the things that should actuate a foreman, and he included ability to manage himself, co-operation, fair play with the men under him, thought of the present, plans and ideas, encouragement to others' ideas, proper credit for these ideas, help to employees and to develop workers to grow into the job.

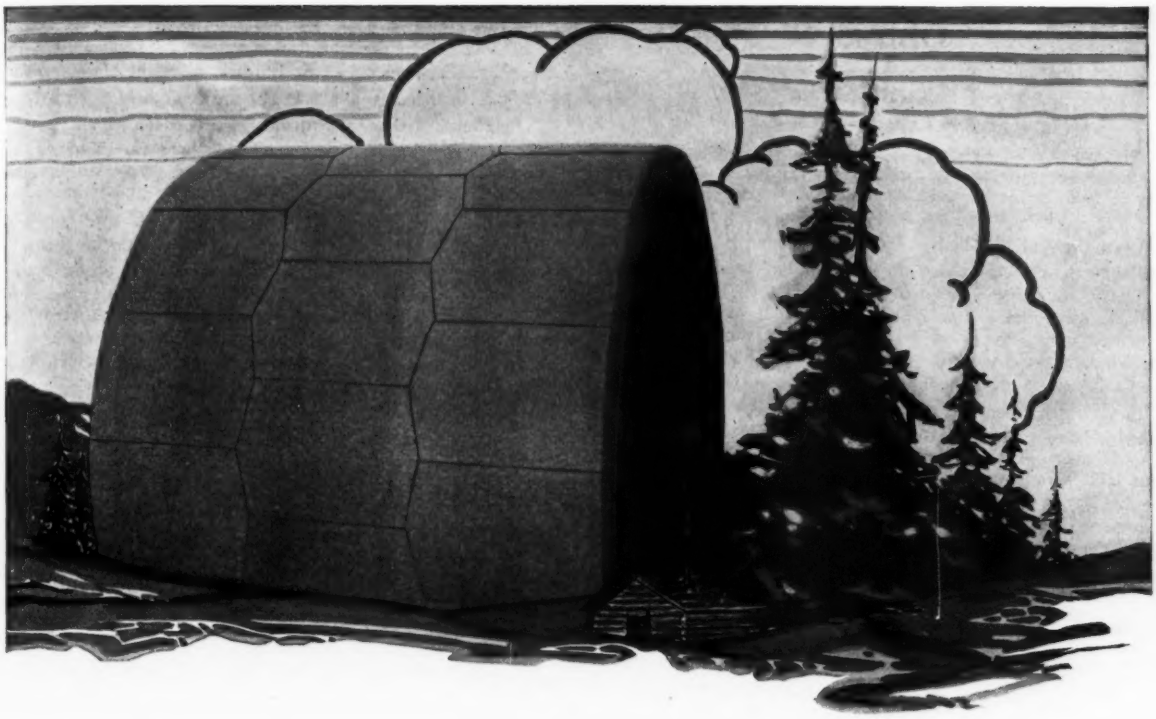
"This club speaks for the business future of Middletown," Mr. Rectanus said. "The word 'foreman' has as many or more definitions as any word in the industrial vocabulary but this group typifies the correct definition—the ability of leadership."

Approximately 100 foremen attended the meeting.

Zeloid Co. Invites Subscriptions

HOLYOKE, Mass., February 11, 1930.—Invitations to subscribe for the stock of the Zeloid Products Corporation are being sent out to investors and those who might be interested in this city and surrounding territory. Plants acquired recently are being now put in condition to receive the machinery for the manufacturing of transparent paper products so much in vogue of late as wrappers or containers for candy, bakery products, fruits, nuts, provisions, perfumes, soaps, tobacco, etc.

The first unit now being installed is expected to produce 1,000 pounds a day at a gross value $400,000 a year. The directors of the company are, besides the president and inventor, Charles Hetzel, Frederick T. Burkhardt, vice-president and mill agent of the Keith Paper Company of Turners Falls; William J. Norton, treasurer of the American Writing Paper Company, Inc., of Holyoke, Joseph B. Weis, president and treasurer of the Perfect Safety Paper Company, also of Holyoke, Samuel Deutsch, owner of the Direct Waxed Paper Company of New York City, A. J. Osborne and Dr. Frank J. Fitzgibbons of Holyoke.



Back of the ground wood industry— the Norton Pulpstone.

Back of the Norton Pulpstone— the world's largest makers of grinding wheels.

NORTON COMPANY
WORCESTER, MASS.

Canadian trade now supplied from Canadian plant

Grinding Wheels
Grinding Machines

NORTON
PULPSTONES

Refractories - Floor
and Stair Tiles

Obituary

Albert W. Priest

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 10, 1930.—Albert Warner Priest, one of the pioneers of the paper industry in Wisconsin, died on February 5, 1930, at his home at Appleton, Wis. He was 82 years of age.

Up to the year 1882 he had become the owner of saw and planing mills but abandoned those at that time in favor of the paper industry. His first venture was the Fox River Paper and Pulp Mill, located on the Fox River at Kaukauna, Wis. He operated this mill until 1890, when he leased it to Oscar Thilmany, well known later in connection with the present Thilmany Pulp and Paper Company, of Kaukauna.

In 1888 Mr. Priest, in company with A. W. Patten and Henry Hewitt, bought a water power privilege at the foot of Kaukauna Rapids and formed the Hewitt Water Power Company. A dam was built so as to make it one of the best water powers on the river. During the same year he erected the paper mill known for many years as the Outagamie Paper and Pulp Company, also located at Kaukauna. At that time it was one of the most extensive in Outagamie county. Mr. Priest continued his ownership and operation of this mill until a few years ago when it was sold to the Patten Paper Company, Ltd., of Appleton.

Several other industries also were created in part by him and at the time of his death he was president of the Hayton Pulp and Blower Company and the Eagle Manufacturing Company, of Appleton, and the Green Bay Wire Works, Green Bay, Wis. His philanthropies were extensive. His wife preceded him by death just a month ago.

Charles E. Eaton

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., February 8, 1930.—Charles E. Eaton, engineer and paper mill designer, died at his home during the past week following an extended illness. He was born in Illinois in 1858 but virtually his entire life was spent in this section. It was in 1899 when the paper mill building boom started in Northern New York that he decided to take up the work of designing and constructing paper mills and hydro-electric plants.

He designed many mills located in this country and Canada, including the Champion Paper Company plant at Carthage, the Island Paper Mill at Carthage, the St. Regis plant at East Norfolk, the Donnacona Paper Mills at Donnacona, Que., and several mills in Nova Scotia. Among the power developments designed by him were the Wilder Development at South Edwards, the Chasm Falls Development, and developments at Higley Falls and Fulton.

His knowledge of engineering was gained through many years of study. He took a keen interest in his profession and kept at work as long as possible. When taken ill he was drawing plans for the remodeling of the Moyer & Pratt Paper Mill, at Lyonsdale, which burned down recently. He was a member of the American Society of Mechanical Engineers and had a wide acquaintance in paper mill circles.

Open San Diego Division

Signalizing the opening of the new building for the San Diego Division, Blake, Moffitt & Towne held open house on Saturday, January 18, an event which was widely attended on the part of the many friends and customers of the house. Much interest was shown in the facilities which have been provided in the new quarters which are conveniently located at 945 J street, corner of 10th.

Howard Moses, manager of the Coarse Paper Department, Sidney G. Rounsefell, Fine Paper Representative, and Ralph M. Willis, credit manager, all members of the San Diego staff, were on hand to greet the visitors and to show them through the new offices and warehouse. From Los Angeles came F. M. Couch, vice-president of the corporation and general manager of the Los Angeles Division, and C. R. Burdick, assistant secretary, to assist the local management in greeting the trade on Opening Day.

The building which has just been remodeled to fit the needs of the local division is a well arranged paper warehouse, consisting of two floors and a mezzanine, providing ample storage space of some 12,000 square feet. The approach to the building is most attractive with a lawn and shrubs set against the warm cream tone of the building. The entrance is in keeping with the general effect and leads into the light and spacious sales room on the main floor.

Here an effective interior has been achieved with plaster finished walls and floor suggestive of red tiling. It is but a step from the offices and sales room to the warehouse proper where the great variety of papers, paper products, and twines which the firm handles have been conveniently stored ready for prompt delivery to the local trade.

It was pointed out by Mr. Couch, who had supervised the arrangements for the new quarters, that while his organization had just recently made very rapid strides in expansion, San Diego was one of the very first locations determined upon by the officials some years ago as justifying a branch in Southern California. Since the establishment there, the business had developed into such proportions that it has been necessary to enlarge the facilities in order to take care of the growing needs of the paper buyers.

"The opening of our new San Diego building," Mr. Couch further stated, "is of special significance to us at this time since it is the first event our company celebrates in this, our 75th Anniversary year. For it was in 1855 that the foundations for our organization were laid in San Francisco and from this beginning has grown an institution with a chain of 17 divisions located in the principal cities of the Pacific Coast."

As striking evidence of the extent of the Blake, Moffitt & Towne activities, on the wall of the San Diego Division hangs a large map, done in poster style with the familiar bear's head trade mark pointing the location of each of the seventeen divisions.

Model Factory Interior at "City of Light"

One of the principal features of the Westinghouse Lighting Institute, the new "City of Light" recently installed on the seventh floor of the Grand Central Palace, at 46th Street and Lexington Avenue, New York City, is a model factory interior flexibly wired for the demonstration of all forms of industrial lighting equipment. RLM Standard Dome Reflectors, Glassteel Diffusers, deep bowl, angle, and prismatic reflectors are all shown here, together with a variety of other units designed to meet special needs in factory lighting. An ingenious arrangement of motors makes it possible for various types of reflectors to be lowered from the ceiling, thus illustrating different systems of lighting under actual installation conditions. To complete the demonstration, machines are located about the room to test adequacy of illumination at the working point; and "local lighting" units, which are occasionally desirable to build up the intensity at this point, are also illustrated.

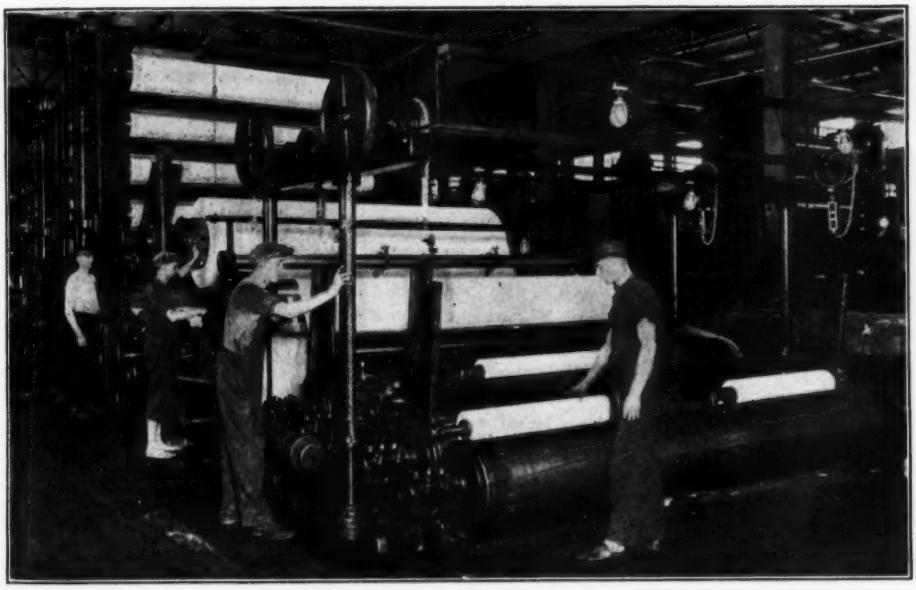
Probably the most interesting of all the demonstrations in this room is the photo-electric cell device, which automatically turns on the overhead lights when daylight falls below a certain intensity, operating not only at nightfall but in the daytime as well, when cloudy conditions cause the daylight to drop below an efficient working level.

Other items at the Institute of especial significance to the factory executive are displays of sign lighting and floodlighting, including a scaled model of a floodlighted factory building, and examples of office and corridor illumination. In addition, there are many exhibits of general lighting interest along Mazda Avenue, the brilliantly illuminated Main Street of this "City of Light." Half-hourly trips through the Westinghouse Lighting Institute are conducted daily from nine-thirty in the morning till four in the afternoon, without charge.

"M & W"
Four Drum Winder and Slitter

During the past few years improvements, which are fully covered by Patents, have been made to meet conditions of the modern high speed and up-to-date mills.

Over 1000 In Operation On All Grades of Paper and Board.



"M & W" Four Drum Winder for Book Paper 18" dia. drums 150" face. Photograph taken in mill of Champion Coated Paper Co., Hamilton, O. (This is one of their 14 "M & W" Winders.)

Many mills are replacing their original M. & W. four drum winders having 10-inch diameter drums with M. & W. four drum winders having drums 15¼-inch, 18-inch, 20-inch and 24-inch diameters. These winders are very desirable for wide and fast running machines and large diameter rolls.

The new improved four-drum winder equipped with ball bearings throughout and drums driven independently with separate electric motors is meeting with great success, as is their new type two drum winder.

A recent valuable money-saving improvement on the M. & W. winder is the removable bottom slitter whereby a slitter blade is changed in the same manner as the top blade. Both are equipped with ball bearings.

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA.

PAPER · MACHINE · BUILDERS

Annual Meeting Program

Technical Association of the Pulp and Paper Industry
Pennsylvania Hotel—February 17-20, 1930

Monday, February 17

9:30 A.M. Executive Committee meeting at the Chemists Club.
Special committee meetings may be arranged by chairmen.
Registration at Pennsylvania Hotel.

Tuesday, February 18

9:30 A.M. GRAND BALL ROOM
General Session—P. H. Glatfelter, chairman.
President's Address.
Secretary-Treasurer's Report.
Report of Special Committee on Permanence and Durability, by F. C. Clark,[1] chairman.
Standing Committee Reports by chairmen.
Vacuum Forming Automatic Paper Machine, by W. H. Millspaugh.[2]
Developments in White Water Utilization, by C. M. Baker.[3]
The Relation of Sheet Properties to Fiber Properties through a Sheet Structure, by C. C. Heritage[5] and R. H. Doughty.[6]
Light, a New Measuring Rod for Paper, by F. A. Pearson.[7]

2:00 P.M. EXHIBIT ROOM No. 2
Power and Mechanical Engineering—J. F. Rhoades,[8] chairman.
Efficient Drying of Paper, by E. W. G. Cooper.[9]
Gradual Temperatures in Paper Drying, by C. F. Rasmussen.[10]
Steam in Paper Mills, by F. E. Winslow[11] and W. C. Newman.[12]
Friction of Pulp Flowing through Pipes, by the committee.
Heat Balance in Paper Machine Room, by A. E. Montgomery[4]

2:00 P.M. GRAND BALL ROOM
Paper Testing—B. W. Scribner, chairman.[13]
Subcommittee Reports.
New Wrinkles in Paper Testing, by Edwin Sutermeister[14] and L. W. Porter.[15]
A Study of the Bursting Strength Test, by F. T. Carson[16] and F. V. Worthington.[17]
Determination of the degree of Surface Sizing of Paper and Paper Board by P. W. Codwise.[18]
A Method of Determining the Volumetric Composition of Paper, by P. K. Baird[19] and C. E. Hrubesky.[20]
The Use of Chemical Microscopy in the Paper Mill, by K. P. Geohegan.[21]

2:00 P.M. EXHIBIT ROOM No. 6
Training for the Industry—H. G. Noyes,[22] chairman.
General Discussion of Future Program.

Wednesday, February 19

9:30 A.M. BANQUET HALL
Power and Mechanical Engineering—F. J. Rhoades,[8] chairman.
Modern Stoker Fired Steam Generating Units by J. G. Worker.[24]
Modern High Pressure Steam Generation, by J. B. Crane.[25]
Hydraulic Ash and Dust Handling in Paper Mills. by F. B. Allen.[26]
Vertical Jet Combustion in the Paper Industry, by Douglas Henderson.[26]

9:30 A.M. GRAND BALL ROOM
Cellulose and Fine and Special Papers—John L. Parsons[27] and Jessie E. Minor,[28] chairmen.
Recent Work Regarding the Structure of Lignin, by Harold Hibbert.[29]
Permanence Definition, Trade Attitude, Practices, etc. by Helen U. Kiely.[30]
Literature of Work on Paper Permanence, by M. D. Bardeen.[31]
Fiber Differences, by Edwin Sutermeister.[34]
Artificial Aging as a Means of Determining Paper Permanence by E. O. Reed.[50]
Chemical Tests for Permanence and their Interpretation:
a. Acidity, by W. D. Hoffman.[32]
Acidity, by B. L. Wehmhoff.[33]
b. Viscosity, by H. Bialkowski.[34]
c. Copper Number, by J. H. Burgen.[35]
Copper Number, by P. B. Davidson.[36]
d. The Mercerization Test, by T. C. Bentzen.[37]
e. Soda Soluble, by B. K. Steadman.[38]
f. Rosin Size, by Marion Swift.[39]
Rosin Size by J. A. DeCew.[51]
g. Impurities by W. E. B. Baker.[53]
Vulcanized Fiber Manufacture by F. L. Simons.[40]

9:30 A.M. EXHIBIT ROOM No. 2
Paper Board—C. C. Heritage, chairman.[5]
Subcommittee Reports by chairmen.
Some Problems in Converting Board to Cartons, by H. L. Rammer.[41]
The Types of Failures in Shipping Containers, by C. A. Plaskett.[42]
Experiments in Laboratory Beating, by A. R. Harvey.[43]
A Study of Water Removal on Paper Machine, by G. R. Wyman[44] and R. A. Wilkins.[45]

2:00 P.M. GRAND BALL ROOM
Physical Standards for Pulp—D. E. Cable, chairman[46]
Strength Testing of Wood Pulp (Section V) by H. A. Rothchild,[47] Ivar Lundbeck,[48] and D. E. Cable.
Preparation of Fiber Test Sheets by M. B. Shaw,[52] G. W. Bicking[53] and L. W. Snyder.[54]
Pulp Evaluation, by O. P. Gephart.[49]
A Flow Rate Method of Pulp Evaluation, by E. R. Schafer[50] and L. A. Carpenter.[53]

2:00 P.M. BANQUET HALL
Corrosion—J. D. Miller,[55] chairman.
Corrosion Resisting Alloys in the Paper Industry, by W. M. Mitchell.[56]
Ferrous Alloys in Sulphite Mills, by Andreas Christensen.[57]
A Suitable Composition for a Sulphite Resistant Alloy by T. H. Nelson.[58]
Inspection and Insurance of Pressure Vessels, by W. D. Halsey.[59]
Report of Committee Survey.

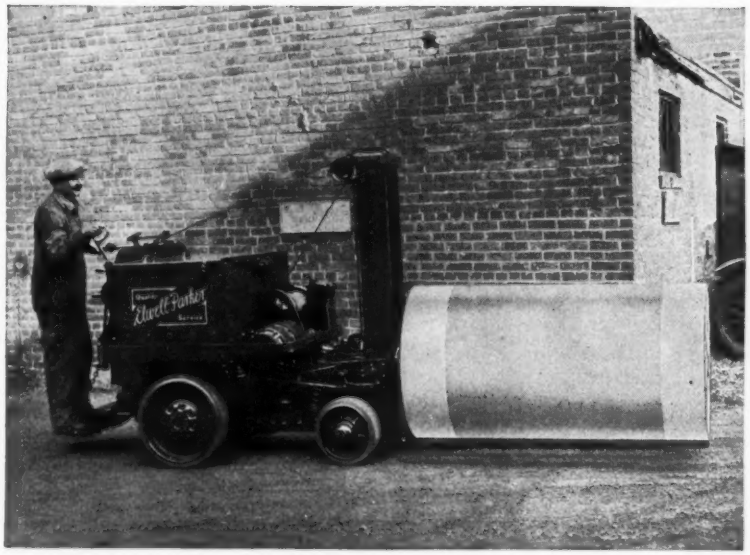
2:00 P.M. EXHIBIT ROOM No. 2
Coated and Processed Papers—Norman Clark, chairman.[60]

. . . If High Wages are Continued, Handling Costs Must be Reduced

IN the opinion of many of the nation's leading paper mill executives, economical methods of transporting materials to production machines, to storage warehouse and to cars have enabled the mills to continue paying high wages to truckers.

Today, with government and industry agreed that present wages should be maintained during the coming year, hundreds of mill superintendents are looking again to Elwell-Parker methods of low cost handling for the solution of the "profit problem of 1930."

In a recent test, one Elwell-Parker electric roll handling truck, with one operator and a helper handled four cars of rolled paper (132 rolls) in a single day —transporting each roll a distance of 400 feet. *Six men* were necessary to perform this job before the E-P Tructor was installed. *Payroll costs at the end of the first year were reduced $3054.* Savings like these have a direct bearing on *profits* and deserve serious attention from executive management.



Saving $3054 Per Year

E-P Fork Type Truck delivers rolls in car between doors for rolling to either end.

On an Elwell-Parker Tructor, the power can be applied to the wheels before brake is released. A fully loaded Tructor can thus be stopped and started on a ramp without danger of slipping back. Your safety committee will appreciate the importance of this advantage.

Why not call an Elwell-Parker Engineer to help you eliminate the costly weaknesses from your handling system? He brings you a wide and varied experience in the application of electric power to mill handling jobs. Call him, or write direct to the factory at Cleveland for details.

The Elwell·Parker Electric Co.

Designers and Builders of Electric Industrial Trucks, Tractors and Cranes for 24 Years

4500 St. Clair Avenue, Cleveland, Ohio

SHIP ON SKIDS ***Tructors***

Special organization meeting. A program of work will be discussed.

Thursday, February 20

9:30 A.M. PARLOR B

Pulpwood and Alkaline Pulping Processes—E. S. Hinman, chairman.[61]

Pulp Washing on Vacuum Filters, by H. A. Morrison.[62]

Critical Temperatures in Sulphate Pulping by the Committee.

A Study of Wood Deterioration, by Francis J. Cirves.[63]

Report on the Evaluation of Certain Species of Pulpwood, by W. H. Monsson[64] and G. H. Chidester.[65]

9:30 A.M. PARLOR 2

Sulphite Pulp—R. N. Miller, chairman.[66]

Further Studies in the Semi-Sulphite Process, by C. E. Curran,[67] W. H. Monsson[64] and G. H. Chidester.[65]

Chemistry of Neutral Sulphite Pulping Process II, by M. W. Bray.[68]

Effect of Bleaching Variables on the Strength Properties of Easy Bleaching Spruce Sulphite, by P. K. Baird[69] and R. H. Doughty.[6]

Sulphur Burning in Sulphite Acid Manufacture, by C. M. Cooper.[70]

9:30 A.M. PARLOR 1

Stuff Preparation—G. K. Spence, chairman.[70]

Artificial Grindstones in Groundwood Manufacture, J. H. Slater.[71]

Centrifugal Separation in Stuff Preparation, by S. C. Lindberg.[72]

High Yield in Straw Paper Making, by L. M. Booth.[73]

Matching Colors in the Laboratory, by C. C. Schneider.[74]

Proposed Standard Method of Analyzing White Water, by A. W. Pesch.[75]

12:30 P.M. SOUTH EAST BALL ROOM—LUNCHEON

General Session—P. H. Glatfelter,[76] chairman.

Report of the Nominating Committee.

Election of Officers.

Resolutions and Amendments.

The Institute of Paper Chemistry, by Otto Kress.[77]

The Measurement of Sulphite Pollution in Sea Water, by H. K. Benson.[78]

Human Engineering at Home and Abroad, by Roderick Olzendam.[79]

NOTE: During the first General Session committee chairmen are requested to give a brief report of the actual accomplishments and plans of the committee. A more detailed report may be given during the sectional meetings, at which time definite action on projects may be taken and resolutions prepared for presentation at the second General Session on Thursday.

NOTE: All members taking part in the discussions are requested to announce their names and the companies they represent. Please speak loudly and distinctly.

NOTE: All chairmen are requested to begin their meetings on time and to allow a definite amount of time for the reading and discussion of papers. If the paper is preprinted it should not be necessary to have it read in its entirety. If the author is not present his paper may be read by title only at the discretion of the meeting chairman.

References

[1] Consulting engineer, South Manchester, Conn.
[2] Consulting engineer, Sandusky, Ohio.
[3] Engineer, American Paper and Pulp Association.
[4] Engineer, J. O. Ross Engineering Company, New York, N. Y.
[5] Chemical engineer, Oxford Paper Co., Rumford, Maine.
[6] Assistant engineer, Forest Products Laboratory, Madison, Wis.
[7] Director, Pearson Research Laboratories, Great Barrington, Mass.
[8] Chief engineer, Mead Pulp and Paper Co., Chillicothe, Ohio.
[9] Superintendent, Don Valley Paper Mills, Toronto, Ont.
[10] President, Rasmussen and Co., engineers, Chicago, Ill.
[11] Engineer, General Electric Co., Philadelphia, Pa.
[12] Engineer, General Electric Co., Philadelphia, Pa.
[13] Chief, Paper Section, U. S. Bureau of Standards, Washington, D. C.
[14] Chief chemist, S. D. Warren Co., Cumberland Mills, Maine.
[15] Chemist, S. D. Warren Co., Cumberland Mills, Maine.
[16] Associate scientist, U. S. Bureau of Standards, Washington, D. C.
[17] Laboratory apprentice, U. S. Bureau of Standards, Washington, D. C.
[18] Chemical engineer, Certain-teed Products Co., Buffalo, N. Y.
[19] Senior chemist, Forest Products Laboratory, Madison, Wis.
[20] Chemist, Forest Products Laboratory, Madison, Wis.
[21] Chief chemist, Aetna Paper Co., Dayton, Ohio.
[22] Coordinator, Wisconsin Vocational Schools, Appleton, Wis.
[23] President, Allen-Sherman-Hoff Co., Philadelphia, Pa.
[24] Assistant to the president, American Engineering Co., Philadelphia, Pa.
[25] High pressure specialist, Combustion Engineering Co., New York, N. Y.
[26] Vice-president, Stratton Engineering Corp., New York, N. Y.
[27] Research chemist, Hammermill Paper Co., Erie, Pa.
[28] Research chemist, Rag Content Paper Manufacturers Assn., Springfield, Mass.
[29] Professor of cellulose chemistry, McGill University, Montreal, P. Q.
[30] Chief chemist, American Writing Paper Co., Holyoke, Mass.
[31] Chief chemist, Lee Paper Co., Vicksburg, Mich.
[32] Chief chemist, Northwest Paper Co., Cloquet, Minn.
[33] Technical director, Government Printing Office, Washington, D. C.
[34] Chemist, American Writing Paper Co., Holyoke, Mass.
[35] Research chemist, Rag Content Paper Mfrs. Assn., Springfield, Mass.
[36] Industrial fellow, Mellon Institute, Pittsburgh, Pa.
[37] Chief chemist, Whiting Plover Paper Co., Stevens Point, Wis.
[38] Chief chemist, Standard Paper Mfg. Co., Richmond, Va.
[39] Chemist, Paper Makers Chemical Corp., Willimansett, Mass.
[40] Technical adviser, Rogers Fibre Co., Kennebunk, Maine.
[41] Chief chemist, Fibreboard Products, Inc., Stockton, Cal.
[42] Technologist, U. S. Forest Products Laboratory, Madison, Wis.
[43] Asst. to the president, Gardner & Harvey Co., Middletown, Ohio.
[44] Vice-president, Bird and Sons, East Walpole, Mass.
[45] Chemical engineer, Bird and Sons, East Walpole, Mass.
[46] Asst. director of research, Oxford Paper Co., Rumford, Maine.
[47] Chemical engineer, Kimberly-Clark Corp., Neenah, Wis.
[48] Technical director (formerly), Thilmany Pulp and Paper Co., Kaukauna, Wis.
[49] Chief chemist, Oxford Miami Paper Co., West Carrollton, Ohio.
[50] Assoc. engineer, U. S. Forest Products Laboratory, Madison, Wis.
[51] Technologist, U. S. Forest Products Laboratory, Madison, Wis.
[52] Paper Technologist, U. S. Bureau of Standards, Washington, D. C.
[53] Paper maker, U. S. Bureau of Standards, Washington, D. C.
[54] Paper technologist, U. S. Bureau of Standards, Washington, D. C.
[55] Chief chemist, York Haven Paper Co., York Haven, Pa.
[56] Consulting metallurgist, Central Alloy Steel Co., Massillon, Ohio.
[57] Sulphite superintendent, Rhinelander Paper Co., Rhinelander, Wis.
[58] Consulting metallurgist, Philadelphia, Pa.
[59] Mechanical engineer, Hartford Steam Boiler Inspection Co., Hartford, Conn.
[60] Superintendent of coating mill, Standard Paper Mfg. Co., Richmond, Va.
[61] Superintendent of pulp mill, P. H. Glatfelter Co., Spring Grove, Pa.
[62] Engineer, Oliver United Filters Co., New York, N. Y.
[63] Chemist, Mosinee Paper Mills, Mosinee, Wis.
[64] Technologist, U. S. Forest Products Laboratory, Madison, Wis.
[65] Engineer, U. S. Forest Products Laboratory, Madison, Wis.
[66] Asst. to the superintendent, Oxford Paper Co., Rumford, Maine.
[67] Senior chemist, U. S. Forest Products Laboratory, Madison, Wis.
[68] Chemist, U. S. Forest Products Laboratory, Madison, Wis.
[69] Professor, School of Chemical Engineering Practice, Massachusetts Institute of Technology (located at the Eastern Mfg. Co., So. Brewer, Maine).
[70] Engineering chemist, Castanea Paper Co., Johnsonburg, Pa.
[71] Manager, Escanaba Paper Co., Escanaba, Mich.
[72] Consulting engineer, Centrifugal Engineering and Patents Co., New York, N. Y.
[73] President, Booth Chemical Co., Elizabeth, N. J.
[74] Chief chemist, Hawthorne Paper Co., Kalamazoo, Mich.
[75] Chief chemist, Falls Manufacturing Co., Oconto Falls, Wis.
[76] President of the Technical Association and vice-president, P. H. Glatfelter Co., Spring Grove, Pa.
[77] Director, Institute of Paper Chemistry, Appleton, Wis.
[78] Professor of chemical engineering, University of Washington, Seattle, Wash.
[79] Director of Industrial Div. Policyholders Service Bureau, Metropolitan Life Insurance Co., New York, N. Y., and formerly of Abitibi Power & Paper Co., Sault Ste. Marie, Ont.
[80] Technical director, Crane & Co., Dalton, Mass.
[81] President, Process Engineers, New York, N. Y.
[82] Chemist, Stein-Hall Company, New York, N. Y.

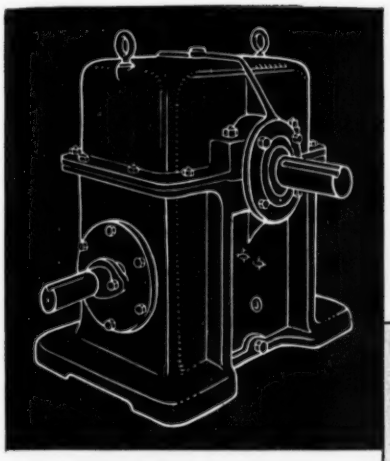
Boston Paper Market Active

BOSTON, Mass., February 10, 1930.—February has started off well with many paper houses, merchants saying in most cases that so far business has been better than in January. In some quarters it is stated that there is not so much activity, but at the same time, it is given out that "strange as it may seem, the best business is in the higher grades of paper." Lines are in demand for advertising by firms which make products of excellent quality and want to tell their story to consumers on paper in keeping with that quality. Book papers are moving very well.

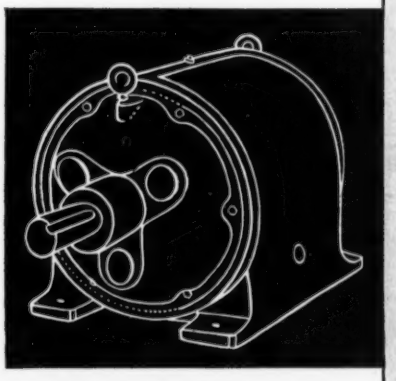
In kraft the price situation seems to be a disturbing element, although some houses report a better actual business. A coarse paper merchant says that the business of his firm showed a 12 per cent increase for January over the corresponding month in 1929. The demand for specialties is holding up well.

The box board market is practically unchanged.

The paper stock market continues quiet, "generally at a stand still," to use the words of a dealer. Sellers are making efforts to stimulate interest in their offerings. Price changes are few.



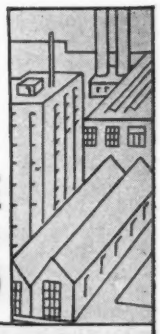
WORM

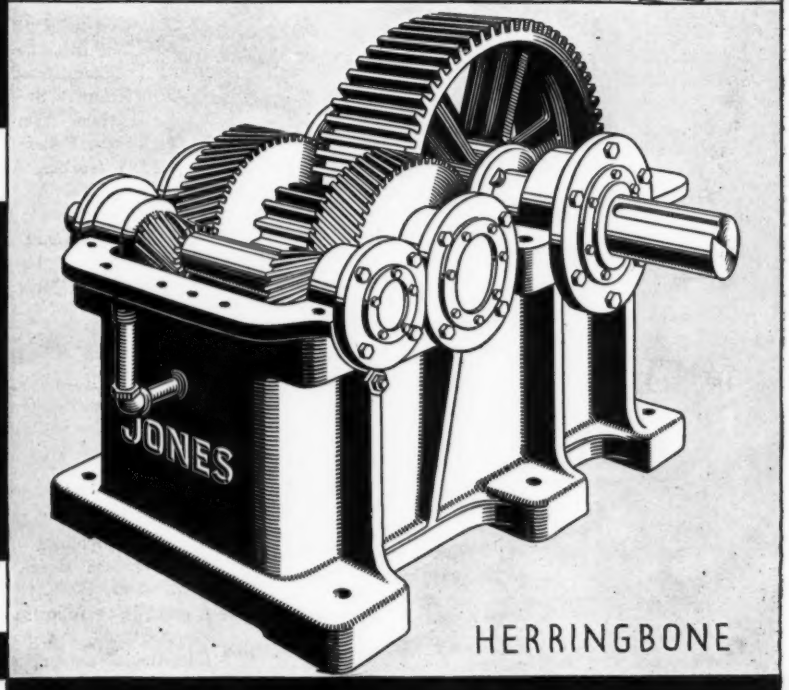


SPUR

Jones

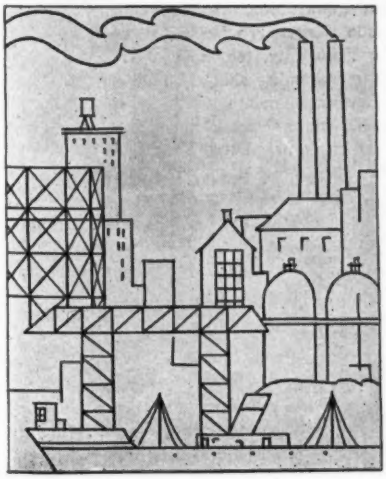
SPUR-WORM-HERRINGBONE REDUCERS





HERRINGBONE

Cost



The installation, in the first place, of a Jones Herringbone Gear Speed Reducer is a simple, quick, and inexpensive job. And as time passes, the original cost is soon absorbed by the money you save. Years of perfect service—no attention except infrequent refilling of the oil chamber—are built into the whole Jones reducer family—spur, worm, or herringbone, the latter shown here with its dust-proof housing removed. All Jones reducers are safely rated to stand above-normal loads when necessary. The gears in all Jones reducers are precision cut and therefore mesh perfectly, and are extra strong, and fully protected. You will get quick service from a stock of more than 2,000 ratios. Now let's talk about your requirements.

W. A. JONES FOUNDRY & MACHINE CO., 4441 W. ROOSEVELT RD., CHICAGO, ILL.

New York Trade Jottings

B. T. McBain, the well known consulting engineer, of Portland, Ore., is a New York visitor this week.

* * *

S. W. Bloom resigned as traffic manager of the Lagerloef Trading Company, February 1, to open his own office as traffic consultant at 205 East 42nd street, New York. He will specialize in traffic work for the paper industry.

* * *

The Kalbfleisch Corporation, of 200 Fifth Avenue, New York, announces that it has purchased from the Armour Fertilizer Works, the sulphate of alumina plant and business of the Jarecki Chemical Company, of Cincinnati, Ohio. The Isaac Winkler & Bro. Company, First National Bank Building, Cincinnati, Ohio, will continue as selling agents.

* * *

Due to the large increase of employes within the last year, the management of D. S. Walton & Co., general paper merchants, of 132-140 Franklin street, New York, deemed it necessary to provide some means of protection for its staff. A group policy has been written by the Prudential Life Insurance Company, which also contains a weekly sick benefit clause.

* * *

Among the guests at the last weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry was C. F. Norton, assistant sales manager of the Strathmore Paper Company and president of the Paper Makers Advertising Club. Mr. Norton is a member of the New England Division of the Salesmen's Association.

* * *

George W. Oliphant, of Castle & Overton, Inc., was elected president of the Association of American Wood Pulp Importers at the annual luncheon meeting and election of officers held recently at the St. Nicholas Club. Orvar Hylin, of the Lagerloef Trading Company, was elected vice president, William H. Anders, of the Perkins Goodwin Company, was relected treasurer and R. D. Hull, of the Mead Sales Company was named secretary.

* * *

M. F. Corin, who for fourteen years has been Philadelphia district sales manager for The Permutit Company, manufacturers of water treating equipment, has been appointed general sales manager. He will have supervision over nineteen branch sales offices throughout the United States, and numerous sales agencies in foreign countries. He will assume his new duties at The Permutit Company's main office in New York sometime during February.

* * *

Charles L. Stillman, business manager of *Fortune*, the new monthly business and financial magazine, was the principal speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Fraternities Club last Monday. Mr. Stillman described the type of printing in the magazine and discussed comprehensively the use of intaglio gravure and letter press on antique finish paper for the main section of the periodical, in both mono-tone and colored work. His address was greatly appreciated by those present.

Bagley & Sewall Officers Elected

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., February 8, 1930.—At the annual organization meeting of the Bagley & Sewall Company the officers and directors were elected for the ensuing year. C. W. Valentine was re-elected president; E. S. Lansing, vice president; C. E. Kinne, secretary; C. D. Bingham, treasurer, and C. L. Thompson, assistant secretary and treasurer. The officers comprise the board of directors.

Program for A. P. & P. A. Annual Meeting

The following is the program for the fifty-third annual meetings of the American Paper and Pulp Association Thursday, February 20, at the Pennsylvania Hotel, New York:—

MORNING SESSION

10:00 Call to Order.
10:05 Minutes of Fifty-Second Annual Meeting.
10:10 Secretary-Treasurer's Annual Report.
10:20 President's Address.
10:40 General Manager's Address.
11:30 Standing Committee Reports.
1:00 Adjournment until 2:30.

AFTERNOON SESSION

2:30 Report of Resolutions Committee.
2:45 The Institute of Paper Chemistry, Ernst Mahler, Kimberly-Clark Corporation.
3:10 Regional Shifts in Paper Production, D. C. Everest, Marathon Paper Mills Company.
3:35 Sales Policies, George H. Mead, Mead Pulp and Paper Co.
4:10 A Working Alliance between Labor and Management, Adam Wilkinson, American Writing Paper Company.
4:30 Unfinished and New Business.
4:45 Adjournment.

FIFTY-SECOND ANNUAL BANQUET

Toastmaster—President S. L. Willson

SPEAKERS

Colonel Wm. J. Donovan
Rev. Dr. Nehemiah Boynton
Charles Milton Newcomb

7:00 Reception, Grand Ball Room Foyer.
7:30 Banquet, Grand Ball Room.

Metropolitan Bag & Paper Jobbers to Meet

The Thirteenth Annual Luncheon, Exhibition and Banquet of the Metropolitan Bag and Paper Jobbers' Association will be held at the Hotel Leverich Towers, Clark and Willow streets, Brooklyn, N. Y., Thursday, March 13. The order of the program is as follows:

As usual, the events of the day will commence at 1 o'clock in the afternoon, when the association will tender a luncheon to members and guests. At this luncheon, speakers of prominence will deliver short addresses on timely topics of interest and importance.

Manufacturers will be afforded facilities for the display of their products without charge. A display table of about six feet long will be assigned to each exhibitor, who will have full charge of his own table. Prices are not to be displayed or business solicited at the exhibition. Table space will be assigned to exhibitors in the order of receipt of applications. Application for reservations should be sent to Nelson Berger, c/o Forbes Paper Company, 362 West Broadway, New York City, telephone Walker 3875.

Samples and display merchandise should be addressed to the association, c/o Hotel Leverick Towers, Clark and Willow streets, Brooklyn, N. Y. Proper arrangements have been made to take care of property and ample opportunities to arrange exhibits will be afforded.

The banquet in the evening is arranged for the presence of both ladies and gentlemen. Music and dancing supreme; surprises galore; have been arranged to make the evening very delightful.

W. A. Lange General Factory Superintendent

MILWAUKEE, Wis., February 17, 1930.—The Kieckhefer Container Company has announced that beginning January 1, Walter A. Lange was appointed general factory superintendent with supervisory duties over all box factories, under the general superintendent.

L. M. Meunier will continue as general mill superintendent.

FELTS THAT WEAR LONGER AND RETAIN THEIR OPENNESS ARE A REAL ECONOMY

KENWOOD

WOOL PRODUCTS

REG. U. S. PAT. OFF.

Kenwood Tanned Board Felts are the result of progressive scientific development. Their capacity for long service and their increased water removal properties are found in a basically sound design plus the added advantages of Kenwood patented tanning processes and the new method of yarn construction.

It was in Kenwood Felts that the one-sided board felt was first introduced. The Kenwood patented Tanning processes that add so materially to the life of a felt were a second fundamental Kenwood development. Now, the new method of yarn construction, which neither adds weight nor increases the size of the yarn, is added to the list of distinctly Kenwood features. Combined, they give the papermaker the ultimate in strength, openness, finish, long life—and felt economy.

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, N. Y.
KENWOOD MILLS LTD., ARNPRIOR, ONTARIO

KENWOOD FELTS

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Berlin, N. H.—The Brown Company has authorized an expansion and improvement program at its pulp and paper mills at Berlin, and at the sulphate pulp mill at La Tuque, Que., operated in the name of the Brown Corporation. Work will include the installation of additional equipment for increased capacity in a number of departments, including chemical by-product division. A new evaporating plant will be installed, designed as one of the largest units of its kind in operation. A new type of smelting furnace has recently been placed in service at the La Tuque mills for the recovery of chemicals used in the special products of the company, and it is proposed to provide other furnace units of this same type at the La Tuque and Berlin plants. It is said that the entire program will cost more than $500,000.

Park Falls, Wis.—The Flambeau Paper Company, Park Falls, has preliminary surveys under way for another dam on the Flambeau River, for service at the mill, to determine the feasibility of such installation. Estimates of cost will also be made.

Vernon, Cal.—The Pioneer Paper Company, 55th and Alameda streets, has approved plans for a new one-story addition to local plant, reported to cost about $20,000, with equipment, and will proceed with superstructure at once.

Tomahawk, Wis.—The new addition to be erected at the plant of the Tomahawk Kraft Paper Company, recently noted in these columns, will be carried out by day labor, and work is scheduled to begin on superstructure within 30 to 60 days. The structure will be of brick and concrete type, and will provide for increased capacity. Estimated cost has not been announced.

Grand Rapids, Mich.—The Grand Rapids Paper Box Company is running on a regular production schedule, giving employment to normal working force, and expects to hold to this basis for an indefinite period. Output at the present time closely corresponds to production in February of last year.

Piermont, N. Y.—The Robert Gair Company, 420 Lexington avenue, New York, will take bids before the close of the month for proposed new addition to plant at Piermont. The structure will be three-story, reinforced-concrete, and will be used both for manufacture of corrugated paper boxes and containers, and storage and distributing service. It is reported to cost more than $200,000, with equipment, instead of a smaller sum previously noted in these columns. William Higginson, 101 Park avenue, New York, is architect. The company has leased a portion of its former plant on Washington street, Brooklyn, N. Y., to the Simmons Company, Kenosha, Wis., which will occupy for another line of service.

Dubuque, Iowa—The National Cornstalk Processes, Inc., recently organized at Chicago, Ill., with capital of $1,000,000, by a local group of prominent interests, has taken over the plant and business of the Maizewood Products Corporation, manufacturer of insulating board products from cornstalks under a patented process. The new organization is arranging an expansion and development program, to include the establishment of a group of mills throughout the middle west, devoted to the production of insulating board and kindred products where cornstalks can be utilized as raw material. Each such mill is reported to cost more than $300,000, with machinery. Facilities will be provided for collection and storage of cornstalks at different agricultural centers. Among the directors of the new company are Herbert T. Perkins, president of the International Harvester Company, 606 South Michigan avenue, Chicago, and George A. Rannel, vice-president and treasurer, as well as A. E. McKinstry, vice-president, of the same company; Charles D. Wiman and Burton F. Peek, president and vice-president, respectively, of Deer & Co., Moline, Ill., manufacturers of harvesting machinery. Chester C. Davis, executive vice-president of the Maizewood Products Corporation, will be identified with the new company.

Holyoke, Mass.—In connection with its general expansion program, the Morart Paper Company, Holyoke, is having plans completed for enlargement of its local mill, to provide a total floor space of about 25,000 square feet, or more than double the present area. The equipment of the Holyoke Paper Products Company, South Hadley Falls, will be removed to the Morart mill as soon as the additional space is available, and large advance in present capacity will be carried out. The South Hadley Falls property was recently acquired by the Morart company.

St. Louis, Mo.—The Gast Bank Note Company, 4167 Chippewa street, manufacturer of commercial paper products, has awarded a general contract to the W. C. Harting Construction Company, 722 Chestnut street, for a new one-story plant at 4175 Chippewa street, for which superstructure will be placed under way at once. It will be 82x125 feet, and is reported to cost more than $30,000, with equipment.

Kimberly, Wis.—The Kimberly-Clark Corporation, Neenah, Wis., has awarded a general contract to Fluor Brothers Construction Company, 52 Otter street, Oshkosh, Wis., for the erection of proposed new addition to mill at Kimberly, consisting of a one-story structure, 122x127 feet, and it is understood that work will proceed at once on the unit, and will not be deferred until spring, as recently noted in these columns. The company has also awarded a number of sub-contracts for the structure, including reinforcing steel, cement, brick and other materials. The entire project is reported to cost close to $100,000, with equipment. The unit will be used for enlargement of the finishing department, and for storage and distributing service. The O'Keefe-Orbison Engineering and Construction Company, 215 East Washington street, Appleton, Wis., is engineer.

Brooklyn, N. Y.—The Imperial Paper Box Corporation 495-505 Sackman street, is perfecting arrangements for the early erection of proposed new addition to plant, consisting of a four-story unit, reported to cost close to $65,000, with equipment. It will be used for increased capacity. S. J. Fox, 66 Court street, Brooklyn, is architect.

Oshkosh, Wis.—The Oshkosh Corrugated Box Company, Harrison and Murdock streets, is reported to have abandoned plans for the time being for its proposed new addition, previously reported in these columns, and will not proceed with the project

Prospectors of 1930 find gold *within* the Factory Walls

Nearly a century ago, a rainbow flashed across the American skies, arching down into the newly discovered pot of gold in Sunny California. Later the rainbow moved behind Chilkoot Pass and lured hardy, eager men to the Yukon country. Again it was the Transvaal . . . South America . . . Australia.

Today, the prospector of old has become a symbol of a bygone era. But 1930 has his counterpart . . . and needs his tireless spirit more than any recent year. The prospector of 1930 is uncovering hidden sources of profit in the operation of his plant . . . is achieving ways to increase net earnings when sales volume remains stationary—or even declines.

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Shellengineers are at the command of 1930's prospectors in the great adventure of business—at the call of men seeking the *latent profits that lie within the walls of every plant.* And there is no obligation in consulting them. Simply write or phone the nearest Shell office. Shell Petroleum Corporation, St. Louis

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until a future date. The new unit was designed by E. J. Juul, Security Bank Building, Sheboygan, Wis., architect, covering a two-story, reinforced concrete structure, estimated to cost close to $150,000, with equipment.

Lockport, N. Y.—George A. Castle, treasurer of the Corson Manufacturing Company, 138 East Main street, manufacturer of paper boxes and containers, has acquired a controlling interest in the company through the purchase of the holdings of E. D. Corson and Mrs. William J. Kemble. Reorganization has been carried out with the retirement of the two last noted persons, and the election of Mr. Castle as president and general manager. Jesse G. Castle will be treasurer. It is understood that an expansion and development program will be carried out at the plant under the new ownership, to provide for increase in present capacity.

Donnacona, Que.—The Donnacona Paper Company, Ltd., is completing the construction of a new addition to its mill, to be used as an insulating board plant, and proposes to begin production at the unit at an early date. The new unit will have an initial capacity of 15,000 tons of finished material per annum, and will be operated on that basis, with full working force. The local news print mill is running on regular production schedule, and the ground wood pulp mill, likewise, is operating full. The first noted plant has a rating of 230 tons per day, while the pulp mill has a capacity of 175 tons daily.

Dalhousie, N. B.—The International Paper Company, New York, is starting production at its new local news print mill at the mouth of the Restigouche River, and will develop output to a point of about 250 tons of finished material per day, or approximately one-half of the installed capacity. Later, the production will be stepped-up to maximum, while the ultimate output at the mill will total 750 tons of news print daily, when the plant is entirely completed as designed. Complete ground wood and sulphate pulp-manufacturing departments have been provided, and these divisions will be operated on a basis corresponding to the paper-making division. The new mill is the largest plant of such character in this district. Power service will be furnished from the Grand Falls power plant of the St. John River Power Company, on the St. John River, an affiliated organization.

Balakhna, Russia—The Soviet Russian Government, Moscow, is projecting plans for a new paper mill at Balakhna, in connection with general industrial expansion program in different lines. The plant will be devoted in part to news print, with another division for the manufacture of paper of higher quality. A pulp-making department will be constructed. The entire project is reported to cost over $5,000,000. The Amtorg Trading Corporation, 261 Fifth avenue, New York, is official buying agency for the Soviet Union.

New Companies, Etc.

Chicago, Ill.—Financial Paper Products, Inc., Room 1200, 231 South LaSalle street, has been organized with a capital of 20,000 shares of stock, no par value, to manufacture and deal in paper goods. The incorporators are Whitney Campbell, Fayette S. Dunn and Laurens G. Hastings.

Detroit, Mich.—The Spaulding Fibre Company, Inc., 1010 Beaubien street, with plant at Tonawanda, N. Y., has filed notice of change in capital stock to 120,000 shares of A common stock, no par value, and 80,000 shares of B common stock, no value, eliminating $300,000 in preferred stock heretofore caried as part of company capitalization.

Pulp Market Weaker at Helsingfors

WASHINGTON, D. C., February 12, 1930.—A cablegram from Commercial Attache Watson at Helsingfors, reports the Finnish market for both sulphite and sulphate pulps as weaker. The mechanical pulp market continues unchanged, the agreement among the Scandinavian and Finnish producers tending to stabilize this industry. In conjunction with the pulp market, the paper market is showing some weakness.

New TAPPI Members

Erik Anderson, assistant sales manager, Pulp and Paper Trading Company, 21 East 40th street, New York, N. Y.

Chr. Anker, engineer, Papirundustriens Forskingkomite, Aamot Modum, Norway.

Albert L. Ball, chemical engineer, Carborundum Company, Niagara Falls, N. Y.

Armand Bergeron, insulating board manufacturing superintendent, Port Alfred Pulp and Paper Corporation, Port Alfred, P. Q.

Harry S. Buzzell, chemist, Oxford Paper Company, Rumford, Me.

Albert B. Gregg, service engineer, Fibre Making Processes, Chicago.

William S. Hodgson, sulphite cook, Fibreboard Products Inc., Port Angeles, Wash.

William S. Kidd, mechanical superintendent, E. B. Eddy Company, Ltd., Hull, P. Q.

Axel T. Klingberg, chemist, Thilmany Pulp and Paper Company, Kaukauna, Wis.

Sven C. Lindberg, president, Erkens Corporation, 122 E. 42nd Street, New York, N. Y.

Frank L. Mitchell, assistant manager of operations, Abitibi Power and Paper Company, Iroquois Falls, Ont.

H. Muller-Clemm, technical director, Zellstofffabrik Waldhof, Mannheim, Germany.

Frederick A. Pearson, research phycicist, Pearson Research Laboratories, Great Barrington, Mass.

Marshall R. Sentman, sales and designing engineer, J, H. Day & Co., Cincinnati, Ohio.

Edgar Turnball, chemist, Knowlton Bros., Inc., 213 Factory street, Watertown, N. Y.

News of the Northwest Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., February 8, 1930.—The Bingham Pump Company, Portland, has been awarded the contract for all the pumps for the new plant of the Puget Sound Pulp and Timber Company which is being built at Everett, Wash., at a cost of $4,000,000, according to announcement made by officials February 6. The pumps are of centrifugal type and must be delivered within 90 days. A large crew of extra men will be added by the Bingham company to speed up production. In connection with the building of this new plant of the Puget Sound Pulp and Timber Company the construction firm of Albertson & Cornell Brothers have just taken out a permit for the construction of a $20,000 sawmill unit.

Plans of the Hawley Pulp and Paper Company to build on their property at Oregon City will be held up until the lease of D. Edward on the Electric hotel expires in 1932 according to a decision handed down by the supreme court.

Pacific Mills, Ltd., have chosen a site for their plant in Vancouver, B. C., and will start at once on a project to cost $150,000 which will be ready for operation in May, according to report early in February.

Paper Mills Named In Consent Decree

WASHINGTON, D. C., February 12, 1930.—Announcement has been made here by the Department of Justice that eight defendants charged with violating the Sherman Anti-trust Law by means of an exclusive agency arrangement for the sale of union water marked paper consented in injunction proceedings which were called for trial in the United States District Court at Albany, N. Y., on February 6, to a decree in favor of the government declaring null and void the contracts by which the exclusive selling arrangement was made effective and prohibiting the defendants from carrying out or recreating the arrangement.

The list of the defendants is as follows: American Writing Paper Company, Inc., Alden Paper Company, Unity Paper Mills, Inc., Hopper Paper Company, Edward S. Alden, William R. Smith, Frank P. Barry and Matthew Burns.

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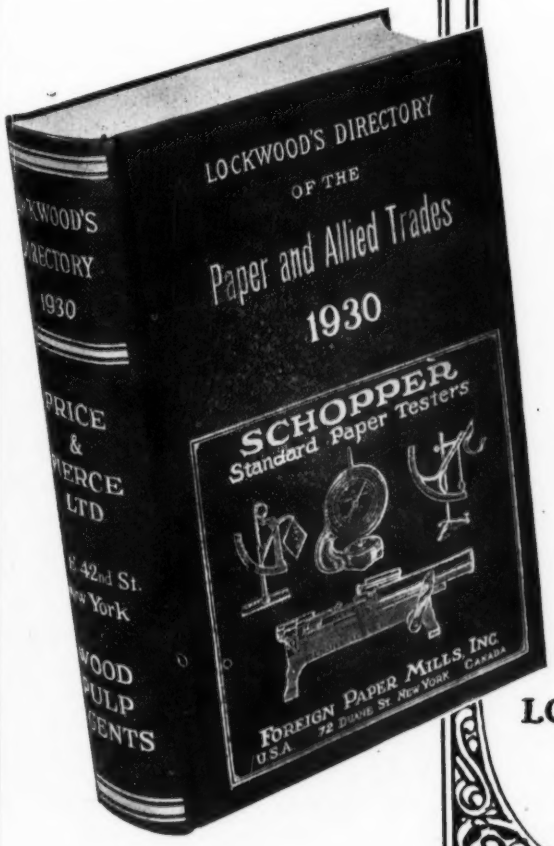

The 56th Consecutive ~ Annual Issue ~

LOCKWOOD'S DIRECTORY

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1930 EDITION

CORRECTED UP-TO-DATE

CONTENTS

Entire contents classified under separate headings for the United States and Canada, alphabetically and geographically arranged by states.

City Addresses of Mills and Mill Supply Houses
Classified List of Paper Mill Products
Classified List of Pulp Mill Products
Coated Paper Manufacturers
Envelope Manufacturers
Glazed and Coated Paper Manufacturers
Idle Mills
Mill Officials
Pad Manufacturers
Paper Merchants
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers
Paper, Wood Pulp and Chemical Fiber Mills of the United States, Canada, Cuba, Mexico and South America
Paper Specialties Manufacturers
Papeterie Manufacturers
Prepared Roofing Manufacturers
Rags and Paper Stock Consumed by the Paper Mills
Stationers in United States, Porto Rico, Canada, Cuba, Hawaiian Islands and the Philippine Islands
Statistical Table of Mills
Tablet Manufacturers
Tag Manufacturers
Toilet Paper Manufacturers
Trade Associations
Twine Manufacturers
Vegetable Parchment Manufacturers
Wall Paper Printers
Water Marks and Brands
Waxed Paper Manufacturers

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Vol. XC **New York, February 13, 1930** **No. 7**

COMING EVENTS

American Paper and Pulp Association, fifty-third Convention and Meeting. Pennsylvania Hotel, February 17-20. Annual Meeting, Thursday, February 20. Annual Banquet, Grand Ball Room, Thursday, February 20.

National Paper Trade Association of the United States. Convention. Pennsylvania Hotel, February 17-19. Theatre Party, "Sons of Guns," Imperial Theatre; Supper-Dance, Hotel Astor, Wednesday, February 19.

Technical Association of the Pulp and Paper Industry. Convention, Pennsylvania Hotel, February 18-20. Luncheon, Thursday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Pennsylvania Hotel, Tuesday, February 18. Luncheon, Tuesday, February 18.

New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Hotel Commodore, Wednesday, February 19.

PROTECTING PULPWOOD IN CANADA

There are many signs that one of the results of the present unsatisfactory conditions in the news print industry will be a much greater degree of co-operation between the federal and provincial governments of Canada in measures relating to the forest products industries than has hitherto been the case. Some time ago, when there was a proposal to put an embargo on the export of all pulpwood—a measure that can only be put into effect by the federal authorities—there was a great outcry on the part of those owning pulpwood limits on a freehold basis or dealing in pulpwood cut from farmers' lots. Now a movement is under way to endeavor to secure a market in Canada, at a remunerative price, for all pulpwood cut on private lots, and coincident with this movement another effort is to be made to endeavor to secure legislation which will prevent raw pulpwood being shipped out of the Dominion. Thus Georges Parent, M.P. for Quebec West, has placed upon the order paper the following motion, which will come before the House of Commons at the beginning of the session: "In the opinion of the House, the time has come for Canada to impose an embargo or exportation duty on pulp wood, coupled with such legislation, if necessary, as would assure settlers a fair remuneration for the wood taken from their lands."

In the Provincial field Premier Taschereau is leaving no stone unturned in his effort to place the industry in a position where a more remunerative return than $55 a ton for news print will become inevitable. In this effort he is being goaded forward by a lively opposition, who lose no opportunity to blame the government for the parlous state in which the industry finds itself. During the week Premier Taschereau indicated another step which is being taken to bring the news print companies to a realization of the fact that if they continue to utilize the forest resources of the Province on a non-remunerative basis the government can make their operations costly and inconvenient in many ways. Thus he said: "We have refused the International Paper Company permission to cut trees under the prescribed size and we learn that 800 men will have to leave the bush in the St. Maurice district in consequence."

Of course, much will depend on how the term "the prescribed size" is interpreted, but in any case there can be no doubt that a tightening up of the restrictions—perhaps even the disallowance of any cutting except under the personal supervision of a government inspector—might prove very awkward. The government might also hamper the freedom of loggers by the strict prevention of waste. Thus it has been said that for every log cut as many as 30 young trees are destroyed in clearing operations and in cutting roads. Should the government intervene to cut this waste to an absolute minimum the cost of getting pulpwood to the mills would be substantially increased. Perhaps the manufacturers would not be sorry to see their hand thus forced in passing along a larger share of the cost to the ultimate consumers, but meanwhile it might place them in an awkward position.

BUILD NOW

A conference of the building industry was held in Washington, D. C., the latter part of last month, which, it is hoped, will have important results and will be greatly beneficial to industry in general. The purpose of the conference was to stabilize building activities in the United States throughout the year as part of the general program presented by President Hoover and endorsed by Julius H. Barnes, chairman of the National Business Survey Conference.

The immediate purpose of this campaign is to stimulate building activities during the next three months in advance of the anticipated summer building rush so that construction may progress at an even pace and that labor may be available at all times for the proper completion of contemplated projects. Of particular interest to the conference was the attitude of individuals and corporations on the subject of industrial and commercial building. The conference will urge that as much as possible of such construction be started prior to May 1 so that the way may be clear after that date for normal summer building. The importance of this plan may be seen from the fact that commercial and industrial building approximates 30 per cent in money value of the total spent in the building industry. Money supplied for this type of building is generally independent of the mortgage market as this money is supplied from the treasuries of industrial concerns which enjoy the ability to discount their paper through the banks.

The conference also will invite the cooperation of banks, mortgage companies and building and loan associations in financing at this time the meritorious construction projects. An effort will be made to have loan applications handled promptly and in such a manner as to maintain interest in building.

Warnings will be issued against the dangers of unjustifiable

delays which might mean eventual labor shortage and higher commodity prices. Strong working committees have been appointed to carry out the purpose of the conference. Mr. Fenton B. Turck, Jr., general chairman of the central committee, has been impressed with the general willingness of all concerned to cooperate in this important movement and is confident that a general understanding of the building program will develop immediate action so that there will be no very great variation in normal curves.

Dutiable as Japanese Hand Made Tissue

A question which has been before the Customs Court since 1924, when the Import Committee was first organized has been settled by the United States Court of Customs and Patent Appeals, by a decision that Japanese hand made tissue paper is dutiable as tissue paper at 6 cents per pound and 15 per cent, and is not dutiable as hand made paper at 3 cents per pound and 15 per cent. The lower court held that the language of the tariff law gave precedence to the words providing for a duty on hand made paper. The Appellate Court, however, in reversing this decision says:

"It clearly appears that Congress intended to limit the 'hand made paper' provision of this paragraph to hand made paper 'weighing 7 pounds or over per ream.' Strict rules of grammatical construction must yield to the manifest intention of Congress."

Customs officials have recently decided several problems of great importance to the paper industry. Among them are the following:

Paper in sheets 15 by 20 inches imported at San Juan, Porto Rico, was held to be dutiable as printing paper, not free of duty as standard news print as claimed by importers.

Lamp shade paper was held to be dutiable at 30 per cent as paper not specially provided for, and not dutiable at 3 cents per pound and 15 per cent as drawing paper as claimed by importers.

Pattern paper was held to be dutiable as paper not specially provided for at 30 per cent instead of as board at 10 per cent as claimed by importers.

Seven importations of hand made paper were held to have been undervalued.

Forty-three importations of German wall paper were held to have been undervalued.

New Construction in Scandinavia

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 10, 1930.—There is considerable new construction activity in the Scandinavian paper producing countries at present, especially in Sweden, which will add considerably to their productive capacity, according to a report from Commercial Attache Marquard H. Lund, Oslo, to the Department of Commerce. Projects recently completed, now under construction, or contemplated will add to Swedish production as follows: Groundwood 30,000 metric tons, bleached sulphite 25,000 tons, unbleached sulphite 7,500 tons, sulphate 219,000 tons, kraft paper 40,000 tons, and other classes of paper 7,000 tons.

In Finland the Veitsiluoto Mills and the Waldhof Company expect to commence operations in the spring of 1930, which will add 30,000 tons respectively to the Finnish output of bleached sulphite and unbleached sulphite. A third plant, situated at Warkau will also increase its output of sulphite pulp by 12,000 tons a year, and the Serlachius paper company its paper production by 8,000 tons. A Norwegian concern is also planning an increase in its paper output of 8,000 tons.

Official Paper Testing Methods

The Technical Association of the Pulp and Paper Industry has officially voted to adopt the revised methods for (1) Determination of Fiber Composition, (2) Paraffin in paper, and (3) Starch in paper.

These revised methods were published in the PAPER TRADE JOURNAL January 2, 1930.

The Proposed Newfoundland Mill

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 11, 1930.—It would appear that all is not plain sailing in regard to the proposal to secure American interest in the establishment of a news print mill of a capacity of 1,000 tons per day on the Gander River in Newfoundland. It was reported both here and in Newfoundland that the Hearst Syndicate was negotiating with the Newfoundland Government in the matter but now the news comes that the Hearst Syndicate has denied any knowledge of these negotiations. However, there is no doubt that negotiations of some kind have been going on with some American interests, the intermediary being Joseph de Champlain, a Canadian who has held interests in Labrador for many years.

The difficulty above mentioned, however, is not the only one. The cost of developing the necessary water power on the Gander River would be very high, owing to the geography of the region, and then again it would be necessary to supplement local supplies of pulpwood with supplies from Labrador. Then again, the Newfoundland legislators are themselves split on the question, and last the properties of the Reid Estate are bound up in the matter.

There is a rumor that on the recent visit of Sir Richard Squires and other members of the Cabinet to New York a deal was made with American interests for a $65,000,000 investment, but that this was contingent on the Newfoundland Government granting a bond guarantee of $15,000,000 and granting extensive timber limits in Labrador. After its experience with the $10,000,000 guarantee in the case of the Armstrong-Whitworth paper mill at Corner Brook, the Legislature is said to be very chary of undertaking another such committment. Only the fortunate sale of the Armstrong-Whitforth concern to the International Paper Company saved the government from having to make good on its guarantee.

As the matter now stands, therefore, there is much uncertainty about the whole scheme, but that negotiations in regard to it are proceeding is directly vouched for by members of the government.

W. L. Nixon Leaves American Writing

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., February 11, 1930.—William L. Nixon, vice-president in charge of the production of the finer writing papers of the American Writing Paper Company, Inc., has resigned to take a position as vice-president and general manager of the Moore & White Company of Philadelphia, nationally known builders of paper mill machinery.

Mr. Nixon received his early training with this company, beginning when he left school and working up to a prominent place in the engineering and manufacturing department, being connected with the firm 19 years. He came to Holyoke in 1915 to join R. F. McElwain at the Chemical Paper Manufacturing Company. He was with that mill until 1923 when he joined the American Writing Paper Company.

Sidney L. Willson, president of the American company, expressed his regrets at his leaving, saying that all during his connection with it "his ability, energy and loyalty have been outstanding."

Pulp Production Declines in Norway

WASHINGTON, D. C., February 12, 1930.—General business conditions continued to improve during the last quarter of the year in Norway, and were considerably better than during the corresponding period of 1928 according to a report from Commercial Attache Lund at Oslo.

Pulp and paper production declined slightly, owing to the seasonal decline in demand, and prices were rather weak, reflecting the general downward tendency in world commodity prices. There was reported to be an increase in pulp wood importations from Russia and Latvia, probably as a result of the increase price of Norwegian pulpwood. No new production came on the market during the last three months of the year.

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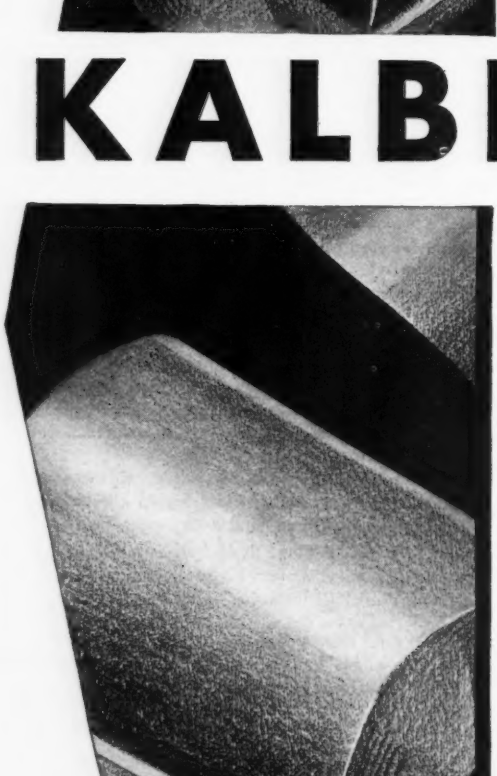

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Looking Forward to Better Forest Utilization

By C. P. Winslow[1]

Behind the scenes, a vast amount of quiet scientific research was necessary before some of our natural resources, such as the oils and metals, could be marketed in form for extensive use; whereas wood, the chief product of the forest, has been easily converted to useful form without much help from the scientist. The ready-made values of wood resulted in rapid expansion of wood-using industries and helped to lay the foundation of an industrial nation, but exploitation for years failed to develop the full possibilities inherent in our forest wealth. Today we are beginning to realize the magnitude of the contribution science may make to wood utilization. Scientific research is as necessary and promises to play as important a role in the future use of wood as it has in the use of other raw materials. Maximum forest value means not less use, but more use, closer use, and better use.

Immediate Problems

The need for scientific research in forest products and its relation to our industrial life and general welfare can be made a little clearer by specific reference to several immediate problems in widely different fields.

Wood in Small Houses and Farm Structures

Wood is the standard material for rural and small urban houses and other buildings. Probably 20 per cent of the entire lumber cut is used for such purposes, and expenditures for it aggregate hundreds of millions of dollars every year. From the standpoint of low maintenance costs, appearance, and permanence, however, a large portion fails to give entire satisfaction. Too often short life, high repair costs, inadequate resistance to storms, plaster cracks, shrinkage of floors and finish, unsatisfactory paint service, decay, and high fuel consumption through poor insulation are directly traceable to poor selection, preparation, and care of the lumber, poor design, and poor construction methods. The present-day tendency for speed in construction is accentuating these difficulties, while, with higher standards of living, owners are increasingly exacting.

To improve this situation more knowledge is needed about the basic principles involved, and this knowledge must be supplied by research and applied by architects, builders, and owners. The present art of designing and constructing frame houses and buildings is based largely on traditional carpentry rules which we accept as a dispensation of nature with little thought of engineering analysis or direct test. How much of this practice is wasteful, unsound, or inefficient?

Research has at last made a start on the testing of full-scale house parts. Even the small amount of testing thus far done points the way to many practical improvements in design that will result in greater rigidity and storm resistance, possibly at less cost. It has been found, for example, that nailing the sheathing diagonally on the wall of a frame building can make the wall two to four times as rigid as a horizontally sheathed wall, the increase depending upon the size and arrangement of the door and window openings. Good practice, therefore, demands either the use of diagonal sheathing or the use of braces to strengthen the horizontally sheathed frame. Tests show that two pieces of 1 by 4 lumber suitably arranged in each wall and let into the edges of the studs increases the rigidity of the horizontally sheathed wall to a point which is favorably comparable to the effect of diagonal sheathing. On the other hand, a commonly used type of bridge bracing placed between the studs halfway between story levels is found to add nothing to the stiffness, and a still more common type of 2 by 4 cut-in diagonal corner bracing increases the stiffness only 50 per cent.

It has also been found that a frame sheathed with green lumber and allowed to stand is only about one-half as rigid as similar construction in which well-seasoned lumber is used at the outset. Results of tests on end-matched lumber show that end-matched sheathing and subflooring of considerably shorter average length than is now used, with joints at random, may be substituted for standard-length construction lumber with all joints on supports, without significant decrease of efficiency in the stiffness of the

THE UNIT OF WOOD STRUCTURE

A single fiber, photographed through a high-power microscope. The spot to the left is the point of a needle. The more we know about the wood fibers the better we can understand and control the properties of wood.

[1] Director, Forest Products Laboratory, Madison, Wis.

TAPPI SECTION, PAGE 62

construction, distribution of concentrated loads, or alignment of joists, studs, or rafters.

Future work on the structural phase of house building should be greatly expanded. A larger demand for this type of testing will undoubtedly come from the activities of the new Advisory Council on Farm Structures, recently constituted by the Secretary of Agriculture as a nation-wide directive body in the field of rural building construction, engineering, and research. Efforts in the immediate future should be directed specifically toward farm structures. It is a good fact to remember that the farm is still the greatest single outlet for the products of the sawmill. Add up all the lumber in standing structures in all the cities, towns, and villages of the United States on one side, and on the other add up just the lumber now in place in buildings, fences, etc., on American farms. The second total will far outweight the first.

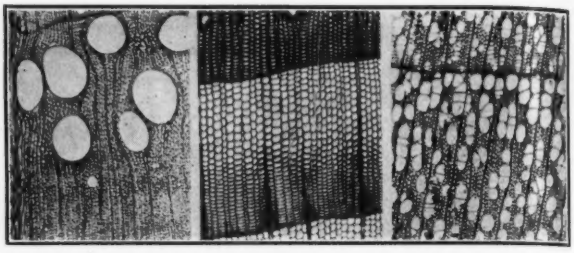
From the standpoint of design, a survey to ascertain the extent to which existing farm structures might profitably be repaired and improved should be made. Following this, demonstrations of how the work could be done most economically should be made on selected structures in different parts of the country. In effect this means finding out what causes one out of three barn roofs to sag, for example, and then to demonstrate how the difficulty may be remedied and the life of existing structures prolonged. Following that, and after the work of the Advisory Council has shown what size and arrangement of farm structures are most suitable, actual tests should supply the construction details essential to permanence and low repair costs. Because the dairy barn is the largest single item of farm building investment except the house, because in dairying there is the most need for good buildings, and because the dairy barn best admits of standardization in size and arrangement, the work should start with it.

Researches should be started which will show how we can make paint last longer, how we can successfully paint the 68 per cent of all softwood lumber which we now find difficult to paint, and specifically what are the fundamentals of paint adhesion. Work on moisture content should be expanded to include the determination of moisture content equilibrium in various farm structures at various seasons of the year and a study of joinery of such parts as dairy barn doors and general framing of farm structures, with a view to minimizing subsequent swelling and shrinkage troubles. Moisture proofing and decay studies should go hand in hand with this work. Work on nail-holding power should be continued, and a study of the holding power of common bolts should be initiated. The latter has an important bearing on barn roof truss design.

The problem of farm building construction is a large and vital one touching 30 million Americans directly, and nothing short of a general coordinated attack on the problem should be considered.

THREE-SPEED WORK IN TURPENTINING LONGLEAF

Chipping started on these three trees at the same time. The tree to the right is given a fresh cut of ¾ inch weekly, as in common commercial practice. This tree will be "through" two or three times as quickly as the others and will produce proportionately less gum. At the left is a tree chipped with a streak only ¼ inch high each week, as recommended by the Forest Products Laboratory. The light streak develops a full flow of gum. At center, improved chipping used by some operators, streak ½ inch high.



WOOD STRUCTURES THAT MAKE A DIFFERENCE

These pictures show cross sections of aspen, Douglas fir, and red oak, highly magnified. By means of cell structure it is possible to identify many woods in pieces as fine as sawdust. Differences in strength, toughness, seasoning quality, etc., are bound up with differences in structure. The exact relations need further study.

Paper From Douglas Fir and Other Western Woods

Another pressing problem is to develop processes for the manufacture of light-colored papers from Douglas fir and other western species which are not now being used for that purpose. A major object in view is to utilize the enormous waste which characterizes present-day lumbering operations on the Pacific coast, while a second important object is to aid in making the United States independent of foreign sources of pulp and paper.

The United States consumed nearly 12,000,000 tons of paper in 1926, an approximately fivefold increase over the 1899 figures. Per capita consumption in the same period increased nearly four times, to more than 200 pounds. During this period, however, the amount of paper or its raw materials imported from other countries increased from 23 to 60 per cent of our total paper consumption.

The Pacific Coast region offers timber resources and other natural advantages such as tidewater transportation for the establishment of a large-scale pulp and paper industry. Production there has in fact increased nearly sixfold during the last 20 years, chiefly in Washington and Oregon. Sitka spruce and western hemlock are used almost exclusively. Sitka spruce is used only in very high-grade paper or in utilizing sawmill waste. Western hemlock is so valuable for pulp that utilization of hemlock sawmill waste at or near tidewater in Washington and Oregon is nearly complete. On the other hand, 70 per cent of the lumber cut of Washington and Oregon is Douglas fir, and surveys show that approximately 4,000,000 cords of Douglas fir material, or about one-third of the entire annual pulp wood requirements of the United States, is left in the woods in logging operations every year because there is no present use for the material.

This situation is both undesirable and unnecessary. There is every reason to believe that adequate pulping studies of Douglas fir and other West Coast species will show how pulping processes should be modified and adapted to produce a diversification of satisfactory products from these woods. This belief is fortified by the results which have already been secured with other species in other regions.

Diversification of "old products from new woods" and "new products from old woods" is the distinct trend of the times. Until the Pacific Coast interests have adequately determined the possibilities and limitations of its available woods for old and new pulp and paper products, it is at a distinct disadvantage in relation to other regions. Strong white paper from Douglas fir would offer a wide extension of the use of this wood for pulp.

But because of distance to markets and freight differentials, pulp and wood on the Pacific Coast must cost at the digester appreciably less than similar pulp woods in other regions with lower freight rates to markets. Mill waste at tidewater mills can satisfactorily meet this necessary low price, but it is not yet known to what extent such supply can be permanently augmented

with other wood either occurring as logging waste or reproduced on cut-over land. This requires intensive study, particularly from the comparative standpoint with comparable woods in other regions.

Naval Stores

The United States, since early days, has been the world's greatest producer of naval stores, meaning turpentine and rosin. American turpentine is the world's standard for excellence. During the last twenty years the annual production, derived from the longleaf and slash pines of the South, has ranged from 340,000 to 750,000 barrels of turpentine, with about three times as many barrels of rosin, the total crop bringing in $20,000,000 to $60,000,000 per year, much of it from abroad.

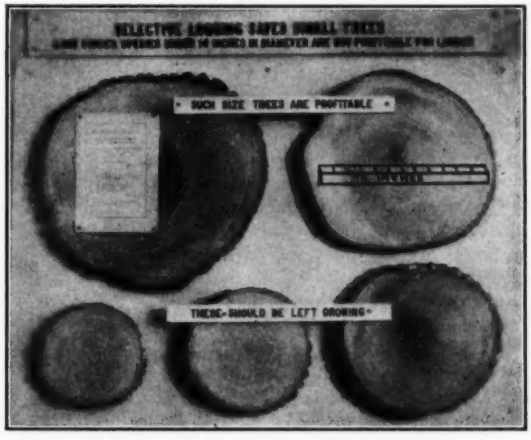
The industry has shown remarkable "staying power," despite wasteful methods of production that have been all too common. But at last the virgin pine forests are nearly gone. No longer is it possible to turpentine one stand to death and then pass on to a new virgin field. Today the main burden of naval stores production is falling definitely on the smaller and second-growth pines of the South.

How long can our present output hold up if we are using the young growth in this fashion? Sustained or increased turpentine harvests must depend hereafter on a steady program of technical improvement—conservative chipping practice, keeping fire out of the stand, and other measures that guarantee maximum life for the producing trees while the next crop of saplings is growing up to take their place.

Research has been active in the field of naval stores production for nearly thirty years, and improved practices already introduced through research have been responsible, in part at least, for the continued large harvests of recent years. Cupping instead of "boxing" the tree is now almost universal throughout the producing area. More and more operators are applying conservative methods which insure greatly increased yields per tree, a lower cost of exploitation, and sustained vigor and growth of the tree despite sounding. Powerful influences are at work to discourage overcupping and the working of undersize trees, practices through which operators only rob themselves.

More basic knowledge of the resinous by-product of the living pine is now the most pressing need of research in this field. This knowledge must be of a different type from that required in the past in bringing about useful though relatively simple improvements. A fuller understanding of how the tree builds resin and what stimulates this function must be gained through microscopical and chemical means.

One of the chief objectives will be to determine the characteristics of high-yielding and low-yielding trees, in order that the best strains for propagation may be recognized. There seem to be strains which produce wood at the expense of gum, and vice versa. At present there is no way of telling one from the other, except by the "cut and try" process with resulting loss of time and money in many cases. If we had the true high-gum-yielding strains identified, and then knew the exact forest conditions and working methods that insured maximum production at low cost, the industry could be stabilized on a much solider basis than it has ever had heretofore.



SELECTIVE CUTTING IN THE LAKE STATES—THE PICTURE TELLS THE STORY

SELECTIVE CUTTING VS. CLEAR CUTTING

The selectively cut pine area at the right, on which the slash has been cut for winter burning, is obviously in condition to produce a series of future crops. Conditions in the clear cut area, left, give little promise of early restocking.

The trees from which our turpentine and rosin crop is obtained also furnish large quantities of lumber, railroad ties, pulp wood, etc. The past few years have shown that increased production of gum need not interfere with a concurrent good yield of wood, so that research is bringing nearer and nearer the day of the "three-purpose forest" in the South—the turpentine, pulp, and lumber forest all in one.

Possibility of a New Raw Material (Lignin)

Lignin is an abstract, technical-sounding word that seems to have little active relation to the lumber pile or the bank account. The composition of lignin is practically unknown. Yet it comprises 25 to 35 per cent of the weight of every piece of wood, and every detailed study that is made emphasizes its importance. Being the cementing material that holds the fibers together in a piece of wood, it must play as important a part in the mechanical properties of wood as glue in a panel of plywood.

The lignin wasted in the manufacture of chemical pulp, particularly of sulphite pulp, is responsible for stream pollution. Approximately one and one-half million cords of lignin were wasted in manufacturing the chemical pulps required by the United States in 1926.

Why not try to make use of some of this lignin? Research might lead to the development of new industries with lignin as a raw material. Except for the interference of certain lignin components, raw wood itself might be made directly into films, lacquers, etc., without going to the expense of first reducing it to cellulose. A knowledge of the chemistry of lignin should break down this barrier and open the way to effective utilization of sawdust and other wood waste not now being effectively used. Foreign chemists are showing increased activity in the study of wood lignin, probably because of the belief that great industrial developments lie ahead for the country that first understands the chemistry of this substance. Information on lignin should also help the control of physical properties of wood, thus adapting wood more effectively to present uses and new uses.

Structure, Composition, and Properties of Wood

Wood is a highly complex and variable material, consisting in the main of cellulose, lignin, pentosans, extractives, and water. These elements go to make up an intricate cellular structure, varying in both quantity and arrangement throughout hundreds of species and also within each species. For every piece of wood, it is this final arrangement that controls its properties, such as strength, hardness, durability, workability, etc. These properties

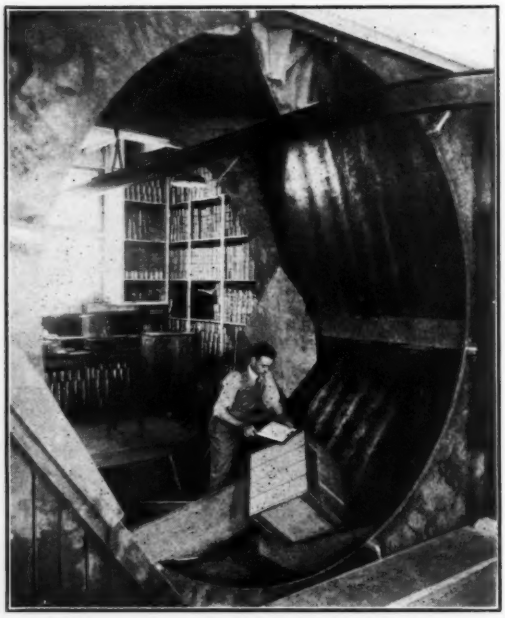
in turn determine how suitable, and how valuable, any piece of wood is for any use.

Cellulose

Much more is known about the cellulose component of wood than about lignin, and its present commercial importance is correspondingly greater. Yet here also there is an immediate field for further study. The problem of completely determining the chemical composition of the crude cellulose which is the main constituent of wood is particularly complex because this crude cellulose is different from the pure cellulose of cotton. The hemicelluloses or impurities of the crude cellulose are the main source of the sugars obtained from wood by hydrolysis and must be largely removed from wood cellulose before it is suitable for use in the manufacture of such material as rayon. But it has been found that as good paper can be made from the crude wood cellulose as that made from commercial pulps which are more nearly pure cellulose. This means that if pulping processes can be developed to retain the entire crude cellulose, pulp yields can be greatly increased without impairment of the properties of the final paper.

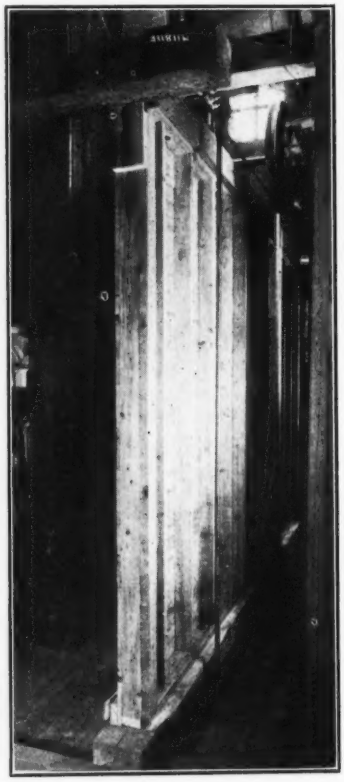
Extractives

The extractive constituents of wood are the essential oils, gums, resins, coloring matters, etc., found in the various wood species. If the extractives were chemically understood and their action could be definitely controlled, new and enlarged markets would be established for difficult species, and new and useful products could be developed. Despite the evident early possibilities in the field of extractives, only two species have been studied at all extensively. In redwood the substance responsible for the red color has been isolated and found to resemble certain natural dyes. It has also been found that in drying redwood the extractives move toward the outside of the board where they deposit just under the surface. In western red cedar a complex organic acid has been isolated that is thought to be responsible for the occasional corrosive action of the wood on metal. These are just two examples of the importance of extractives in connection with the practical utility of wood.



REALISTIC TEST FOR CONTAINERS

A single ride in this 8-foot testing drum will put a shipping container through all its paces. A few minutes' tumbling in the drum gives the average box or crate all the thumps, bumps, and spills necessary to determine its weak points. Better design of containers is the result.



TESTING FOR STRENGTH AND STIFFNESS

The addition of a single diagonal 2 by 4 inch brace increased the rigidity of this panel by 330 per cent. The million-pound testing machine proved it.

Under the classification of physical properties, every wood has 30 or more properties relating directly to the requirements of use, such as bending and compressive strength, hardness, toughness, resistance to splitting, a certain degree of resistance to decay and staining, nail-holding power, and heat insulating capacity. All of these show wide variations, not only between species and between trees, but even within a given tree. How to segregate the material in accordance with them, in order to insure uniformity and better values, and how to modify them by methods of treatment that will insure durability, fire resistance, and drying without injury, requires, first, a basic knowledge of the properties themselves and their variability. Only by the most complete knowledge of the variation of wood properties in its relation to composition, structure, and growth, as well as in its general relation to use requirements, can the ultimate aims of utility forestry be realized.

Harvesting the Material

Generally speaking, lumbering operations throughout the country are carrying on without definite information as to which qualities and sizes of logs are yielding a profit and which are bringing about a loss. Small trees that are now being felled and logged at a loss would comprise the nucleus of a new crop if left to grow. Forest values take on an entirely new complexion when only the logs and trees which pay their way are harvested. This further results in diminishing the current overproduction of low-grade material and in giving what would otherwise be cut-over lands new values readily recognized by the timber owner—and by bonding and banking institutions as well.

Work in this field has already shown that it is unprofitable to harvest for lumber Lake States hardwoods less than 13 inches D. B. H. Arkansas pine less than 14 inches, and Appalachian hardwoods less than 12 to 14 inches, and that if such unprofit-

able trees were left to grow they would form a nucleus for a new crop, thereby creating improved land and forest values. While similar studies of southern pine and California white fir are under way, the work in hand can not begin to supply the information that is increasingly needed for all species and for all localities.

Other harvesting problems that must finally be answered by research and industry working together are the improvement of small sawmill practice, the conversion of woods and mill waste into small dimension stock, and the determination of the quantity and character of available woods waste in typical regions such as Douglas fir.

Selection of Material

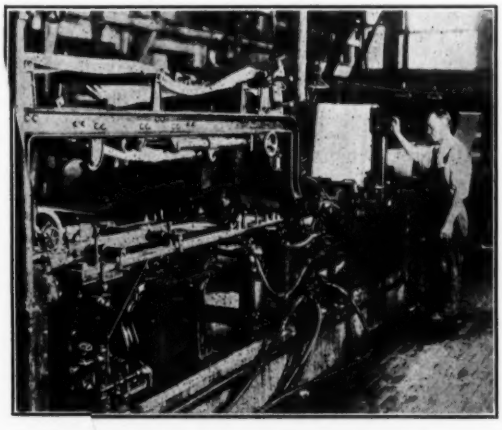
Knowledge of the properties of wood and their variation within given species is not enough. Intelligent sales and utilization policies demand that wood be allocated to its different uses in accordance with that knowledge.

Intelligently employed, the variation of wood in each of its thirty or more properties may be used to extend the uses to which wood can be satisfactorily adapted; disregarded, it becomes a handicap in every use. For example, uniformity of strength is important for structural uses; shock resistance for automobile bodies, durability for certain sash and frame uses, heat insulating for siding and sheathing, hardness for floors. Analysis of thousands of specimens has shown that density or specific gravity of wood is an index to many of these properties. In a few species practical means of segregating stock on a density basis have been worked out. A vast saving of time and a vast improvement in utilization would result if the same were done for ten or a dozen other commercial species.

Visual defects, such as knots, checks, pitch pockets, and stain also affect the suitability of wood for many purposes. Intensive study is required to determine more closely the size, quantity, and frequency of such defects, by species and regions, in order that lumber may be more efficiently graded and selected to meet the requirements of use.

Studying Characteristic Defects

A study of characteristic lumber defects undertaken by the Forest Products Laboratory two years ago involved visits to 41 mills throughout the softwood producing regions, the tallying of 00 M board feet of lumber, and the exact description of each and every defect occurring in the different grades. Only a beginning has been made in the analysis of the data, but enough has been done already to demonstrate distinct differences between



EXPERIMENTAL MACHINE

With its aid research has pointed the way to the successful pulping of birch, aspen, and other little-used species, and to large improvements in yield and quality of products with standard pulp woods such as spruce and hemlock. A fundamental study of the variables involved in the paper-making process is now in progress.

"ENORMOUS AMOUNTS OF WOOD AND MILL WASTE CAN BE UTILIZED BY THE PULP AND PAPER INDUSTRY"

species in the size and tightness of knots and in the occurrence of pitch, shake, and other defects that are of great importance in selecting lumber for particular uses.

Preparation of Material

The tendency of wood to react unfavorably to changes in moisture content is the one broad characteristic that interferes most with its efficient use. In the seasoning process moisture changes account for the loss of millions of dollars annually through degrade as a result of checking, loosening of knots, and deformation. Moisture in lumber in transit, by adding to the weight, materially increases freight charges. Moisture changes in wood in service produce practically all the unfortunate effects to which wood is subject as a construction material—shrinking and swelling, warping, cupping, checking, twisting, weathering, decay, opening up of cracks in floors and woodwork, scaling and deterioration of paint surfaces.

Moisture Surveys

Real progress in improving the seasoning of lumber and reducing the variability in the moisture content of the dry stock must be based upon knowledge of present practice in the industry. To obtain that knowledge extensive moisture surveys covering winter and summer conditions have been made during the last few years and will be of direct use to associations of both producers and consumers in improving seasoning and storage methods and in the development of moisture specifications. As a result of one such survey a large lumber producing association already adopted definite moisture specifications in its grading rules.

The extent to which improvements in seasoning are necessary and desirable depends very largely upon the requirements of the use to which the product is to be put. In other words, the question is not entirely how dry wood can be made or how wet it can be sold, but also what is the proper moisture content of wood for interior and exterior construction; that is, what are the ranges of moisture content permissible for effective use? The only answer to this question is to go into the house, store, offices, and factories of the United States and find out. Testing of wood specimens for moisture content in houses in various regions has already begun, and will be prosecuted until much of the guesswork about moisture conditions in service is replaced by actual data.

Modifying the Material

One reason why wood will continue to meet the advancing demands of civilization is that its form and properties can be modified and changed to suit thousands of different requirements. No other staple raw material appears in our economy in so many different guises. Deprived of other commodities, man could house, clothe, transport, educate, and well-nigh subsist himself on wood and wood products alone.

Advances continue to be made in the modification of wood properties. Complete control lies in a full understanding of wood structure and composition, the importance of which has already

been pointed out. The other essential element of the problem is the use of accessory materials—preservatives, paint, glue, solvents, etc., —in changing wood characteristics. Research is active in both of these fields, and the immediate objectives are clearly defined.

Painting

Research in the painting of wood has for its purpose to lengthen the serviceable life of the paint coating and to give greater protection to the wood. It has been found that paint will last longer on edge grain than on flat grain boards. In the case of flat grain boards the paint will last longer if applied to the sap side of the board than on the heart side. All woods will react differently, and best results can only be assured by careful study to include all species and a wide range of painting and priming materials.

Preservation

Notable work has been done in the field of preservative treatment. Reliable statistics show that the life of railway ties treated with preservatives, under methods encouraged by research workers, has been so greatly extended that the average yearly number of tie renewals per mile on the principal railroads of the United States decreased from 242 in 1904 to 182 in 1927. Greater quantities of mine timbers, piling for land and marine use, posts, poles, and other outdoor structural material are being preservatively treated today than ever before.

Notwithstanding the successful work that research has accomplished, further studies are needed in the immediate future looking toward better control of treating conditions for all species so as to obtain better penetration of preservatives, with greater economy and avoidance of damage to the wood. Some species of wood that are resistant to treatment, such as the Rocky mountain firs and spruces, need special study.

Gluing

Studies of the effect of the direction of grain in glued plywood panels, such as those used in doors and table tops, have shown that much of the warping and cupping that occurs in such panels can be prevented by avoiding the use of cross-grained or spiral-grained veneer. The interrelations of temperature, viscosity, and consistency of glues and the surface conditions of the wood have been worked out and made available to manufacturers throughout the country. A wider development of waterproof glues is still badly needed.

Fireproofing

The problem of fireproofing wood is one that has long fascinated the producing industry as well as the investigators, and for good reason. Its solution means uncounted millions. Much patient research lies ahead, but constructive progress is being made. A practical treatment that combines fire retardance, decay-proofing, and insect resistance may not be far in the future.

Adapting the Material to Service

Work needs to be done toward improving the use of wood through the practical study of design—the testing of actual wood constructions. Here, too, in the final analysis, an intimate knowledge of the composition, properties, and variations of quality of wood will be necessary to give the last word in answer to constructional problems, but in the meantime structural techniques based on present knowledge and full-scale strength tests should be pushed ahead as rapidly as possible. Some of the latest conclusions from full-scale tests have been stated in the earlier paraghaphs dealing with small house and farm building construction.

Boxes and Crates

Statistics show that 10 per cent of the annual cut of lumber in the United States goes into the construction of shipping containers. As the population of the country increases, demand for container material will continue to expand and will increasingly make itself felt as a factor in forest output.

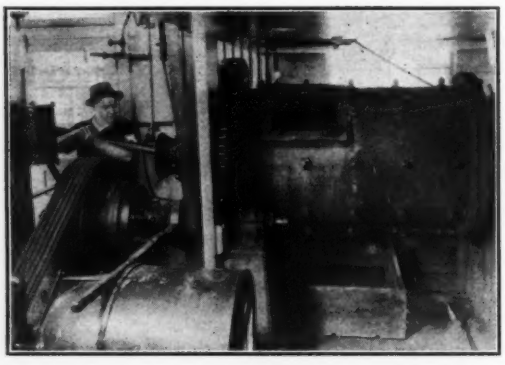
The uses of knotty lumber in the box industry is one of the best examples of utilization of the lower grades . The results of a recent study show that, for a certain type of unstrapped box used in large quantities, the use of knotty lumber under proper restrictions actually gives a more efficient and better balanced container than the use of clear lumber.

The study of transportation hazards as related to the design of shipping containers is another field of active investigation. The purpose is to determine the relative importance of different transportation hazards and to show how either to eliminate them or to design the commodity, the container, or the packing to withstand them.

Conversion of Wood into Pulp Products

The manufacture of pulp and paper products from wood is an outstanding field for the utilization of wood waste, little-used species, and second-growth timber of inferior quality. How to utilize a wide variety of species in many different wood-producing regions for a broad range of pulp products is a major research problem. Success in this endeavor will not only secure improved land use and more complete wood utilization, but also will help the unfavorable situation of pulp and paper importation already referred to. The work demands fundamentally a sound knowledge of the requirements of use of commercial pulp products, of the properties of paper, pulp, and wood, and of how these are affected by the production processes.

Research on the production of strong white papers from southern pine is being extended to all phases of the pulping and paper-making operation, from the woods to the finished sheet, with good prospects of commercially practical results. Commercial strong, light-colored papers have been successfully duplicated from hardwood sulphite. The duplication of commercia print, wrapper, and Manila papers has been accomplished by the use of the semisulphite process with eastern hemlock, balsam fir, aspen, and black gum. Progress is being made in the utilizatio and disposal of sulphite mill effluents, often the cause of strean pollution. A rough survey conducted in the Douglas fir regior discussed in the opening paragraphs, indicates that enormous amounts of woods and mill waste can be effectively utilized by the pulp and paper industry if a satisfactory technic can be worked out. This problem takes a place of outstanding impc'tance in the entire field of forest products research at presen'



THE ROD MILL OPENS THE WAY

This friendly monster, with 3,800 pounds of bronze rods in its maw, has been adapted by the Forest Products Laboratory for use in pulping many kinds of wood for paper, with greatly increased yields. The rod-mill idea was borrowed from the mineral industry.

Crown-Willamette Tax Canceled

PORTLAND, Ore., February 7, 1930.—In accordane with a decision of the United States board of tax appeals the trasury department has cancelled an assessment of $139,607 against ne Crown-Willamette Paper Company for income and excess prots in taxes in 1917.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For additional information regarding these abstracts subscribers should address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C.

Machinery

Soaking Machine for Waste Paper Stock. C. T. Crocker. U. S. pat. 1,676,636, July 10, 1929.—This is an improvement in the machine described in U. S. pat. 1,326,949, of December 30, 1919. In order to eliminate the drawbacks due to heavy impurities settling out on the perforated bottom formerly used, which required frequent shutting down to clean the apparatus, the bottom is now made solid, and the solid impurities pass through the machine along with the thick paper stock. With the construction formerly used, any tendency of the liquid level to rise at the stock discharging end of the machine was offset by the flow of the liquid through the perforated bottom. In the present construction this is obtained by the substitution of "open duckers" for some of the old "solid duckers"; the action of the "open duckers," so far as the movement of the paper forward through the machine is concerned, remains the same, the revolving fingers of vanes pushing the paper down and forward, while the parts of the "open duckers" allow the chemical solution to flow back there through and find its own level.—A. P.-C.

Apparatus and Process for Cleaning Paper Stock. C. L. Keller assignor to The Richardson Company. U. S. pat. 1,676,652, July 10, 1928.—The stock is fed into a relatively small and deep tank, the stock inlet being placed in a compartment formed by baffles extending down to the bottom of the tank so that the stock must overflow over the baffles. In this way the heavy impurities are held back and can be removed. The stock then passes into a relatively wide and shallow tank, being fed in at the top and drawn off at the bottom through a number of discharge outlets placed around the circumference of the tank. The light impurities floating on top can be removed from the surface by skimming off.—A. P.-C.

Paper Pulp Shredder. F. B. Philbrick assignor to Waterville Iron Works. U. S. pat. 1,676,048, July 3, 1928.—This is an improvement to W. F. Hussey's U. S. pat. 1,510,782, of Oct. 7, 1924. It covers various mechanical details of construction enabling the cutting knives to be individually removable, or to be differentially adjusted either to accommodate pulp which may consistently run thicker at one side than at the other or where it is desired to limit the length of the strips into which the pulp is cut or shredded by reducing the clearance between the fixed and moving knives to effect a cut-off at a desired point. The knives are so constructed and placed that they will not only have a direct shearing action but will have a tearing effect which will loosen the fibers and render their complete disintegration in the beater easier.—A. P.-C.

Pulping Engine. H. Mallickh. U. S. pat. 1,657,218, Jan. 24, 1928.—When a wide faced roll, with trough of corresponding width, is used in a beater or pulping engine, the pulp on the outside of the trough has to travel through a much longer distance than the one on the inside, near the midfeather; and as a result by the time the pulp near the outside has been brought to the desired condition, the portion near the midfeather has been unduly cut and shortened. In order to overcome this drawback and at the same time have the advantage of large output obtained by using wide rolls, the portion of the trough back of the roll is made narrower than the latter (the outer end of the roll jutting out beyound the outer edge of the trough). The portion of the stock passing under roll at the outer end is thrown over the roll into a channel which delivers it back in front of the roll, but at the inner end.—A. P.-C.

Method and Means for Paper Stock Refining. H. Liebeck, assignor to Scott Paper Company, U. S. pat. 1,676,653, July 10, 1928.—The feed box of the refiner is divided into three compartments by means of two adjustable weirs. The stock is introduced into the middle compartment; it passes over the lower weir into the compartment from which the stock is fed to the refiner; on the other side of the central compartment is a somewhat higher weir which forms an overflow chamber. On being discharged from the refiner the stock is elevated by centrifugal force to a box at an apparently higher level than the head box, from which it passes by gravity into a second box at a level intermediate to those of the feed and discharge boxes. This third box is also divided into three compartments: one of them is formed by a partition provided with a screen which allows the properly refined stock to pass through while the incompletely refined stock is held back and flows over a weir from which it is discharged back into the feed compartment of the head box of the refiner.—A. P.-C.

Screen for Paper Machines. R. S. Clarke assignor to Bird Machine Company. U. S. pat. 1,668,141, May 1, 1928.—In order to obtain thorough cleaning of the pulp, a much greater amount of water is used than is customary, and the screened stock passes directly to a concentrator which dewaters it to the consistency required to feed it to the paper machine.—A. P.-C.

Method and Apparatus for Regulating the Consistency of Pulp Stock. C. R. Van de Carr Jr. U. S. pat. 1,665,425, Apr. 10, 1928.—The stock to be regulated is withdrawn from any suitable part of the system and is fed into a vat within which is mounted a screening device, preferably in the form of a rotatable hollow cylinder, the outer wall of which is covered with a wire screen of suitable mesh. Communicating with the interior of the cylinder is a discharge outlet. Between the end of the vat wall and the perforated wall of the cylinder is a baffle to prevent eddying of the material within the vat. Under given conditions the level of the stock in the vat will depend on the consistency of the pulp, and a float is mounted in the vat and connected to regulate the supply of water introduced at that part of the system from which the pulp to be regulated is taken —A. P.-C.

Method and Means for Preventing the Sheet from Tearing Across the Whole Width of the Paper Machine. C. N. Merrill assignor to Great Northern Paper Company. U. S. pat. 1,662,200, Mar. 13, 1928.—Means are provided at the wire in the form of a nozzle some distance in from each edge of the sheet, to separate a narrow strip or strips from the remainder of the sheet by a longitudinal space after the tear starts and before it has progressed across the entire width of the sheet. When the tear reaches the longitudinal space thus formed, the tear stops, thus leaving the narrow strip which continues to pass through the machine. As soon as the cause of the break has been remedied, the narrow strip is widened out in the usual manner until the full sheet is again formed, thus entirely eliminating the rethreading operation which is usually necessary after a break has occurred in the sheet. The water supply to the nozzles is controlled by means of a nomally open electrical circuit, which

TAPPI Section, Page 68

is automatically closed by means of any one of a series of break-detectors provided at different points along the machine.—A. P.-C.

Stock Consistency Regulator for Paper Machines. M. de Zurik. U. S. pat. 1,669,412, May 15, 1928.—The stock flows into a mixing box from which it flows over and under a series of baffle plates for thorough mixing, then through a screen into a chamber where it flows horizontally and over a weir which keeps the depth of the stock constant. In this chamber is a float, preferably conical in shape, which is partly immersed in the stock, the depth of which it is immeresed depending on the consistency of the stock at this point. The float is connected to an indicator which may be calibrated to show the consistency of the stock, and also to the device for controlling the amount of water added to the stock. The water is added through an elongated or chisel-shaped nozzle. Which delivers the stream into two compartments by a knife-edge partition; the water which falls on one side of the partition is mixed with the stock and water which falls on the other side of the partition goes to waste. When the consistency rises the nozzle is swerved to one side to increase the amount of water added to the stock; while if the consistency decreases the nozzle is swerved in the opposite direction to reduce the amount of added water. After the stock and added water have been thoroughly mixed, the diluted stock passes through a second horizontal chamber where the depth is kept constant by means of a weir; and in this chamber is a second similar to the first, which indicates the consisteny of the stock as it is fed to the paper machine.—A. P.-C.

Shake for Fourdrinier Paper Machines. P. Erkens. U. S. pat. 1,670,884, May 22, 1928. The wire is so guided by clamping means arranged at a short distance from the connection of those rails which are shaken differently that the wire cloth is compelled to follow the shaking motion of the rails. Preferably, these means comprise a roll arranged below the wire cloth and extending across the entire width thereof and two comparatively narrow rolls which engage only the marginal portions of the wire so as not to interfere with the sheet which passes between them.—A. P.-C.

Oscillating Suction Box. A. Aldrich assignor to Beloit Iron Works. U. S. pat. 1,677,128, July 17, 1928. In order to prevent uneven wear or scoring of the suction box covers, the ends of the boxes are oscillated lengthwise and crosswise of the wire in a plane parallel to the plane of the wire. All the suction boxes are oscillated in unison, each box being oscillated about a substantially fixed central axis. A simple and rugged mechanism is described for automatically accomplishing the oscillation of the suction boxes at a readily variable speed. The manner in which this is accomplished is such that the movement of the ends of the suction boxes may be resolved into a component longitudional of the machine and a second component transverse of the machine, but these components as between opposite ends of the suction boxes being in opposite directions, there is no tendency of the suction boxes to drag the wire to one sid or the other.—A. P.-C.

Head Box and Stock Inlet for Fourdrinier Paper Machines. G. S. Whitman Jr. U. S. pat. 1,662,226, Mar. 13, 1928. The head box is divided into a number of communicating compartments, and the flow of stock through the compartments is controlled by adjustable gates or baffles to prevent the formation of cross currents and bulking of the stock on the wire of the machine. The head box is provided with a compartment serving as a quiet storage space at the front to maintain the desired head of stock for high speeds of the wire, the walls of this compartment extending to a considerable height above the wire. At the top of this compartment means are provided for removing any foam or froth which may acccumulate; it comprises a header to which are connected a number of spray pipes which direct fresh or white water on the surface of the stock so as to force the foam over an adjustable skimming pate at the back of the machine. To diffuse the stock and deliver it at all angles to the wire, a perforated board is provided in the opening through which the stock passes from the head box into the stock inlet or nozzle, this board being preferably set at an angle across the opening of the head box. The inlet consists of a nozzle and apron board formed as a unit together with a one-piece slice for maintaining uniformity of thickness across the entire width of the sheet. The inlet is mounted so as to be vertically adjustable, and a secondary adjustable one-piece slice may be provided if desired. In order to adjust the thickness of the sheet across the width of the machine, a number of vertical nozzles are provided, which project into the inside of the stock inlet, and the amount of water is increased at the points where the sheet is running too heavy.—A. P.-C.

Removable Type of Fourdrinier Paper Machine. E. E. Berry assignor to Beloit Iron Works. U. S. pat. 1,678,176, July 24, 1928. In U. S. pat. 1,599,402 of Sept. 14, 1926, means are described for transferring the breast roll from a separate support to the table structure for removal thereon during the changing of wires. In the present invention the same principle is embodied to provide means for supporting the suction couch roll either permanently or temporarily upon the table structure. By such a combination the ease with which wires may be changed is greatly increased.—A. P.-C.

Flow-Evener Roll for Paper Machines. C. W. Valentine assignor to The Bagley & Sewall Company. U. S. pat. 1,667,755, May 1, 1928. Instead of useing a hollow perforated roll across the slice or stock inlet, so as to provide a more even flow of the stock on to the wire, the roll is constructed of a number of spaced radially-fluted disks, which are mounted on a number of smooth rods. The roll is rotated at a suitable speed, and its height above the bottom of the head box may be adjusted.—A. P.-C.

Fourdrinier Paper Machine. H. L. Kutter assignor to the Black-Cawson Company. U. S. pat. 1,662,929, Mar. 20, 1928. The shake portion of the table is constructed so that the breast roll can be moved bodily from its normal operating position and suspended in temporary supports carried the shake section to provide adequate slacking of the wire, after which the entire section, together with the breast roll, table rolls, save-alls and such other parts as are associated with it, may be moved completely to one side to allow the wire to be changed. The supporting mechanism of the shake section is constructed so as to obtain substantially frictionless shaking motion. The save-alls are carried by the shake section, but are restrained against shaking motion when the section is shaken, and the construction is such that definite positioning of the save-alls relative to the rolls is assured.—A. P.-C.

Table Roll and Felt Roll for Paper Machines. R. H. Whitney assignor to The B. F. Goodrich Company. U. S. pat. 1,660,538, Feb. 28, 1928. A solid wooden roll, or a light metal roll, is covered with a relatively thin sleeve of vulcanized acid-resisting rubber. Plies of adhesive tape are wound on the ends of the roll and a thin layer of rubber cement is applied to the ends of the roll to hold the sleeve in position. In the case of felt ponding ridges in the rubber sleeve, which spread out the felt and prevent it from gathering, and at the same time it helps to keep the rubber sleeve in position.—A. P.-C.

Stock Deflector for Flow Boxes for Paper Machines. A. N. Russell. U. S. pat. 1,660,274, Feb. 21, 1928. There is provided a pond plate which is adjustable in the lateral direction of the paper machine wire and is positioned between the orifice of the flow box and the deckle straps. The edge of the plate in proximity to the flow box is tempered to a knife-edge so that it will cut into the stock without disturbing its direction of flow on to the wire. Secured to and movable with the pond plate is the deflector pipe which carries the surplus stock

clea. of the wire, and this pipe may be led to a storage tank or back to the stock pond or flow box.—A. P.-C.

Suction Roll. A. N. Russell and B. A. Malkin assignors to The Paper and Textile Machinery Company. U. S. pat. 1,678,083, July 24, 1928. Between the roll and the suction box inside the roll, packing is provided to seal the box and maintain it in air-tight contact with the inner surface of the roll. The packing is mounted in channels, on the under side of which are mounted wedge-shaped members adapted to engage with other wedges secured to draw bars mounted in a channel guides formed in the suction box. The wedges may be attached to the channel guides. The draw bars or channels are moved in the longitudinal direction by means of adjusting screws. The draw bars or channels rising on the wedges in the channel guides raise the packing until it contacts with the inner surface of the suction roll. The suction box is mounted on self-aligning water-tight bearings at each end of the roll, which bearings are so constructed that the suction box may be withdrawn without disturbing the water tight packing in the bearings.—A. P.-C.

Suction Roll. C. Seybold and J. Boltersdorf. U. S. pat. 1,666,472, Apr. 17, 1928. The usual perforated metal cover is dispensed with. The roll, is constructed with a series of open suction cells around its circumference formed by spaced longitudinal bars or ribs, and these cells are closed by the paper machine wire, suction being admitted only to the cells which are so closed.—A. P.-C.

Machine for Planing Suction Box Covers. H. M. Ostertag assignor to Paper Patents Company, U. S. pat. 1,682,980, Sept. 4, 1928. The suction box is supported at substantially the same points at which it is supported when operatively mounted in the paper machine, and means are provided for guiding the planing device over the top of the suction box to control the planing effect.—A. P.-C.

Developments in Fourdrinier Wires. E. J. Buell, Niagara Wire Weaving Company. Paper Mill 51, no. 42, 10, 12, 16 (Oct. 20, 1928). A brief outline of modern developments in fourdrinier wire manufacture to meet the increasingly exacting operating condition due to the use of wider and higher speed paper machines.—A. P.-C.

Apparatus for Withdrawing Air from Suction Boxes. M. Wenzel. U. S. pat. 1,688,216, Oct. 16, 1928. The suction boxes of a paper machine are connected to the successive stages of a multi-stage vacuum pump.—A. P.-C.

Apparatus for Reconditioning Felts of Paper Machines. M. F. Flynn assignor to New Nap Systems Inc. U. S. pat. 1,678,978, July 31, 1928. A napping cylinder is supported on a track mounted transversely of the felt. The bristles of the napping cylinder engage the felt, and the cylinder is caused to travel back and forth over the felt.—A. P.-C.

Felt Makers Viewpoint. William H. Lee, Lockport Felt Company. Paper Mill 51, no. 42, 18-22 (Oct. 20, 1928). A plea for close cooperation between the felt maker and papermaker in order that the latter's felt problems may be satisfactorily solved.—A. P.-C.

Attachment for Felt Conditions. W. R. Fowler U. S. pat. 1,675,540, July 3, 1928. The attachment consists essentially of a suitably slotted cover plate that can be slipped in position over the suction box of the felt conditioner to replace a worn out cover, thus avoiding having to discard the entire suction box when the cover has become worn.—A. P.-C.

Felt Cleaning Machine. F. W. Vickery assignor to Vickery Ltd. U. S. pat. 1, 659,010, Feb. 14, 1928. The device is particularly suited for cleaning the felts of cylinder machines, in which the stock is picked up by the felt in a very wet condition and considerable short fibers, coloring the loading adhere to the felt. Cleaning fluid is forced under pressure against one or both faces of the felt, the fluid being confined to the restricted area of the felt and held pressed against the surface of the felt. The fluid is preferably directed in a direction opposite to that in which the felt is moving; and the nozzles which supply the jets are preferably positioned so as to direct the fluid at an angle against the felt and a sufficient distance from the surface of the felt so that the vena contracts of each of the jets shall be at the face of the felt. As an additional cleansing means, steam may be introduced to heat the fluid flowing along in contact with the felt. The felt is locally tensioned along the area where the cleansing fluid is operating, and this is preferably accomplished by means of a plate which is pressed in contact with the under surface of the felt and is preferably held against the felt with a yielding pressure; the plate is provided with ridges on its opposite edges extending longitudinally of the felt in order to assist in confining the cleaning fluid to a restricted area. The efficiency of the cleaning operation may be increased by causing the jets on the under side of the felt to be intermittently interrupted, whereby a series of impacts are delivered by each jet against the surface of the felt. After the surface of the felt has been cleaned as above, it is passed over a suction box which draws down the felt into a sagging position. While in this position additional jets of water under pressure are directed against the felt, and at the same time a wiping surface is provided to just touch the lowest point of the sagging portion of the felt to remove any particle of water or of dirt which have not been removed by the suction.—A. P.-C.

Laminated Paper Machine. I. A. Newcombe assignor to the Consolidated Paper Company. U. S. pat. 1, 669,011, May 8, 1928. In a multi-cylinder machine, particularly when the stocks in the several vats are of different natures, the pick-up felt is upwardly inclined at an angle of 7° to 20° as it passes from one cylinder to the next, so as to better drain the stock picked up from one cylinder and enable it to pick up the next layer of pulp more readily and bind the two layers more thoroughly.—A. P.-C.

Cylinder Paper Machine. J. W. Brassington assignor to The Paper and Textile Machinery Company Company. U. S. pat. 1,660,643, Feb. 28, 1928. Near the bottom of the vat, in the vertical plane passing through the axis of the cylinder mold, agitators are provided so as to prevent the fibers from being drawn against the cylinder mold in a more or less parallel direction. A suction box is provided inside the cylinder, and the inclination of the box to the vertical is adjustable so as to regulate the attraction of the fibers towards the cylinder.—A. P.-C.

Cylinder Paper Machine. J. S. Beck. U. S. Pat. 1,670,182, May 15, 1928. In order that the machine may be run at a higher speed, a suction box is provided inside the cylinder at a point where it is not submerged in the stock in the vat, the angular position of the box being adjustable. The box is separated by longitudinal partitions into separate pockets, and each of these pockets has a series of outlets in the bottom from which extend nipples; the hollow central shaft (which does not rotate with the cylinder) is likewise provided with longitudinal series of nipples opening thereinto, and these nipples are connected by flexible tubes to the nipples in the bottom of the suction box.—A. P.-C.

Plied Sheet and Method of Producing the Same. I. J. Novak assignor to the Raybestos Company. U. S. pat. 1,672,988, June 12, 1928. The machine used consists essentially of an ordinary wet machine. The first ply is built up to the desired thickness on the make-up roll, after which, without stopping the machine the vat is supplied with the stock from which it is desired to make the second ply until the latter has been built up to the desired thickness. In this manner perfect interlocking between the plies is obtained without the aid of any cementitious agent, but simply by the grading of the stock of one character to that of another character used in the adjoining ply.—A. P.-C.

Cylinder Paper Machine. A. T. Yoder. U. S. pat. 1,664,722, Apr. 3, 1928. The stock is fed from the head box into the vat containing the cylinder mold through a "silencer roll," consisting of a hollow perforated cylinder mounted transversely of the vat. The use of this roll quiets "boiling currents" of stock in their

flow to the cylinder mold, thus permitting the machine to be run at higher speeds with the formation of a better sheet of paper.—A. P.-C.

Processed Papers

Insulating Paper. R. P. Rose and H. E. Cude. Can. pat. 279,623, Apr. 24, 1928. An insulating paper comprises rosin-sized hydrated cotton fiber, rubber and a protective colloid including an acetylated starch and a soluble silicate.—A. P.-C.

Insulating Paper. Felten & Guilleaume Carlswerk A. G. Fr. pats. 633,540, 633,541, April 28, 1927. *No. 633,540.* In making insulating papers the water in the pulp is replaced by a solvent for phenolic resins (such as alcohol), phenolic resins are added, and the resins are precipitated on the fiber by water. *No. 633,541.* The resins are formed during the manufacture of the paper by adding phenols and aldehydes in the correct proportions to the pulp diluted in water.—A. P.-C.

Waterproof and Blood-Proof Paper. J. McL. Cathcart. Can. pat. 281,889, July 24, 1928. Waterproof and blood-proof paper is produced by introducing paper pulp into a beater, heating the pulp with live steam to 100° C., adding 5% of paraffin wax, and then running on a paper machine as usual.—A. P.-C.

Waterproofed Paper. H. Kuppel. Eng. pat. 281,655, Dec. 2, 1926. Paper is treated with linseed oil, varnish or other waterproofing agent and is crimped to render it more resistent to tearing. It may be further reinforced by fabric, threads of jute or cotton, or by uniting one sheet of paper with another.—A. P.-C.

Method of Forming Combined Paper and Fabric Material. J. R. McKenna. U. S. pat. 1,689,354, Oct. 30, 1928. Crimped or crinkled paper is stretched to temporarily remove the crimps and produce a smooth surface to which an adhesive coating is applied. The adhesive-coated surface of the paper is laid against the fabric, the paper is relieved of stretch to permit the crimps to reform, and the combined material is subjected to pressure to cause the crimps of the paper and the adhesive to become embedded in the meshes of the fabric.—A. P.-C.

Waterproofing Paper. J. Reid assignor to Scutan Co. Eng. pat. 281,316, Nov. 26, 1926. Flexible sheets are produced by passing thin paper through a bath of bituminous material heated to about 120° C. or higher and removing it before it becomes completely saturated. The waterproofing bath may be formed of 100 parts of "mineral rubber," 10 parts of scale wax and 10 parts of montan wax.—A. P.-C.

Paper Fabric. W. A. Lorenz, assignor to The Otaka Fabric Co. U. S. pat. 1,682,346, Aug. 28, 1928. A material adapted for paper wash cloth purposes comprises a layer of sized pulp and one crinkling.—A. P.-C.

Waterproofing Paper. W. H. Charch and K. E. Prindle assignors to Dupont Cellophane Company, Inc. Eng. pat. 283,109, Jan. 3, 1927. Waterproofing compositions comprise nitrocellulose or a similar cellulose ester together with a gum or resin, a wax or wax-like material, plasticizing substance and solvents, etc. Several formulas are given.—A. P.-C.

Reinforced Paper. C. H. Howard assignor to American Reenforced Paper Company. U. S. pat. 1,679,721, Aug. 7, 1928. The paper is reinforced by means of approximately parallel unspun fibers adhesively secured to the paper in spaced groups disposed at frequent intervals, both longitudinally and across the face of the paper, and separated by areas that are unreinforced by the unspun fibers.—A. P.-C.

Process and Apparatus for Forming Greasproof Fiber Containers. D. G. Bagill assignor to American Can Company. U. S. pat. 1,689,593, Oct. 30, 1928. A strip of paper is passed in contact with a greaseproofing compound and then onto a forming mandrel with the greaseproofing compound in contact with the mandrel. Other strips of paper coated with adhesive are fed upon the mandrel and over the first mentioned strip, the resultant tubing being simultaneously rotated and advanced on the mandrel. The winding pressure causes the greaseproofing material to enter all the interstices of the paper and to impregnate thoroughly the body of the paper forming the inner ply of the container.—A. P.-C.

Apparatus for Conditioning Paper. E. F. Dreger. U. S. pat. 1,657,073, Jan. 24, 1928. The patent provides for constructing a paper conditioning room which can be adjusted according to the number and size of sheets of paper to be conditioned, and the amount of air is regulated according to the size to which the compartments have been adjusted.—A. P.-C.

Method and Machine for Making Vulcanized Fiber. G. W. Temple. U. S. pat. 1,669,429, May 15, 1928. After passing through the vulcanizing bath, the sheet is wound on a square mandrel, instead of on a roll, until it has been built up to the required thickness. As it is being wound on the square mandrel, the sheet is subjected to the action of a steam heated pressure roll, the position of which is substantially fixed, except for the slight vertical displacement required to accommodate the increase in thickness as the sheet builds up.—A. P.-C.

Method of and Apparatus for Making Vulcanized Fiber. Wm. M. Shoemaker, Jr., asisgnor to National Vulcanized Fibre Company. U. S. pats. 1,675,666 and 1,675,667, July 3, 1928. In order to obtain uniform heat distribution throughout the whole thickness of the finished vulcanized fiber board, which is made up of a number of plies of paper which have been treated with a suitable vulcanizing solution, the required number of webs are simultaneously passed through a bath, e.g., of zinc chloride solution, and before being pressed together into a single multiple sheet are heated individually to the required temperature. The sheets are preferably passed through the heater in approximately parallel position and heating units are placed between the webs so as to heat both sides of each sheet uniformly. No. 1,675,666 covers the process and No. 1,675,667 covers the apparatus.—A. P.-C.

Method of and Apparatus for Effecting Rapid Drying of Printed or Processed Paper. G. L. Clark assignor to Nashua Gummed and Coated Paper Company. U. S. pat. 1,668,943, May 8, 1928. In order to prevent smudging or offsetting of the ink or of the processing coating, the paper after treatment is festooned and caused to travel for a considerable distance through a chamber filled with ozonized air.—A. P.-C.

Fiber Board for Making Cans and Other Receptacles. D. G. McGill, assignor to American Can Company. U. S. pat. 1,676,617, July 10, 1928. Fibrous stock is impregnated with a mixture of 75 to 90 parts of paraffin and 10 to 25 parts of montan wax, which has a melting point above the theoretical mean melting point of the components of the mixture.—A. P.-C.

Articles of Wood Pulp. J. J. H. Sturmey. Eng. pat. 282,929, Oct. 20, 1926. Water bottles, floats or other articles formed of wood pulp are coated (suitably by spray-coating or electrodeposition) with metals such as iron with a second coating of copper, aluminum or nickel.—A. P.-C.

Molded Paper Articles. L. Feneux. Fr. pat. 634,652, May 7, 1927. Objects are made in intaglio or in relief by placing a sheet of paper in a mold, then a piece of cloth and then cellulose or paper pulp, which is made by mixing the cellulose or paper in water with alcohol, flour, gelatin, alum and a powder such as ground glass, sand or metal.—A. P.-C.

Moisture Recording Device for Paper Machines. C. J. Guenther assignor to Stickle Steam Specialties Company. U. S. pat. 1,667,516, Apr. 24, 1928. In the Stickle automatic steam control for paper driers, variations in the tension of the sheet caused by variations in the moisture content are used to operate the exhaust and live steam control valves to the driers. The inventor now provides an indicating and recording mechanism for making a permanent record of the tension (and consequently also of the moisture content) of the sheet as it goes through the machine and to show to what extent live and exhaust steam is used for drying throughout each 24 hour period.—A. P.-C.

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Factors to Consider in Working Out Mergers*

By A. D. Berning, Partner, Ernst & Ernst

The many mergers that have been made, and the many that are in the making, afford ample laboratory material for the research work necessary for the determination and study of at least the principal factors to be considered in *working out* mergers.

But to qualify as an authority on these factors, one would need a great many opportunities to follow very closely the process of merging, from conception through to conclusion, and then of watching each of the resulting unions for a period of its operation as a going business.

I have not lived long enough, nor have I had opportunity in a sufficient number of cases, to qualify as an authority on the subject. I have participated, however, in a number of meetings where the economic, legal, financial and other phases of the merger were carefully reviewed and discussed, and after consummation of the merger, have had opportunities to discuss with management the problems that confronted them in the practical working of the merged operations. The proof of the pudding is in the eating; but in the case of mergers, digestion must be taken into account. The digestive process, in some cases is prolonged and at times painful. If we watch it carefully, we can learn much. This knowledge we can transmute into what we may call factors to consider in working out mergers.

The Human Factor

Some of the factors that must claim our attention are, of course, working capital, valuations, plant capacities, geographic location, patents, trade-marks, earning power, merchandising, distribution, and so on. All of these are important, and no venture is likely to succeed unless they are duly considered. Too frequently, however, we are tempted to dwell on these physical and technical aspects of the proposition and call it a day without paying much attention to the *human* factor.

The human factor, if we can call it that for want of a better name, is frequently more potent in influencing the issue, to merge or not to merge, than those material quantities that can be measured more or less satisfactorily, with some kind of yardstick. Whatever may be the factors, the interested parties will be influenced in their consideration of them by what their best interests appear to be. More projects that had for their object the merging of business interests have fallen by the wayside and been left abandoned there because of the human factors that entered into the negotiations, than any that have failed as a result of disagreement on relative values. Yardsticks that have so far proven fairly satisfactory in measuring and valuing physical factors are not adapted to gauging the human factor in its many phases and complexities.

Willingness on the part of some to throw in their lot with others is quite a factor, and worthy of a great deal of consideration. Mutual respect based, of course, on mutual confidence that has for its foundation the character and the habits of the interests to be merged, has had its effect in finally consummating deals of this kind. I know of a case where the people in control of a fine old company refused a very substantial offer to sell out to other interests, their sole reason being that they held their business and its good-will in too high esteem. Some time later, they accepted a much more modest amount for their interests from another competitor who they felt would provide more harmonious surroundings.

So we come to consideration of the character of the interests involved as an important factor in working out mergers.

"Trading" and Compromises

In merging, the trading abilities of the participants are directed to the protection and, if possible, the enhancement of their values. Merging involves "trading" in all that the term implies. There is that which is written in the contract and that which may be implied or understood. And that which is without the contract is sometimes the compromise.

Not infrequently, the compromises, or if we may use another term, the "implied obligations" which management may feel that it owes for good-will, influence, or in recognition of stock ownership or some other real or imaginary consideration, contribute the most to the prolonged and painful digestive process which may follow the merging operation.

Every Merger Is Different

No two mergers are similar or even comparable in many of their major problems. Every merger, large or small, has its own peculiarities. One merger involves factors that another does not, and factors that may be common to both will have a different order of importance in one than in the other. There may be, for example, serious problems related to ownership of units to be included in a merger. Many times, when the securities of one or more units are lodged in trust estates or in the hands of various individuals, the nature of the securities to be issued has to meet individual requirements. In many cases, a much larger amount of banking assistance is needed because of the cash payments to be made to owners. As a consequence, the banker is often in a much stronger position to dictate the particular kind of securities which he desires to purchase to meet existing market conditions.

In a recent case, it was possible for five companies to merge without new financing. This was in many respects an ideal situation. The capital structure could be created with a view

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to minimum fixed charges, because all stockholders of the five companies were willing to accept all common shares.

However, there are certain basic questions that apply to all business consolidations, and to these I shall direct your particular attention.

Six Fundamental Factors

The present era is primarily characterized by mergers. In practically every form of industrial activity, individual enterprises are rushing into the trend. What then prompts these separate business concerns to weld their physical and intangible assets, goodwill and future prospects? If we have been students of the movement, we are conscious of many mergers, which are now having varying degrees of success. In a number of cases, we deduce that the participants, when their merger was conceived, did not realize, or give sufficient attention to, the importance of the *fundamentals,* and have had consequent disappointments.

From experience, I would say that the more important factors to consider in any merger movement are:

1—Economic and legal soundness of the merger.
2—Management.
3—Financial position.
4—Earning power.
5—Formula or plan of merger.
6—Launching the merged business.

Economic and Legal Soundness

The question of economic and legal soundness is one which I believe should be very carefully studied in advance of all others. Unless there is a sound economic reason for a business consolidation from the more important viewpoints, it can hardly be justified. By sound economic reason I mean sound expectancy that the combined concerns will be able to operate with greater benefit to the old owners and the public as well. There should be the least possible doubt about the original investment of the contributors being kept intact.

Without discussing the legal aspects, I should mention that the provisions of the Sherman Anti-Trust laws or the Clayton act, which respectively have to do with combinations in restraint of trade and creation of a monopoly, may require consideration. Also, the problem of taxes; because the cost of doing business in the different states varies greatly and the trend of state taxation becomes increasingly important. In these and many other matters, the advice of recognized legal counsel is a prime necessity.

Points of Economic Soundness

The factor of economic soundness has many important angles from which the proposed amalgamation should be visualized. Physical facilities employed in the business should be modern and well adapted to its purpose, and at least on a par with the facilities of other companies in the same business. The properties of manufacturing companies should be viewed from the standpoint of not only their reproductive and present sound values, but also their *useful* value to the new company. The probable future of the industry should receive careful thought as well as the probable ability of the new company to meet any new conditions which may arise and affect its stability.

The location of plants is important. For example, a contemplated merger of manufacturing companies situated on the Eastern Seaboard would call for consideration of the need of facilities at strategic points in other sections of the country for both production and distribution. There have been many mergers wherein the locations of the plants were such as to presuppose subsequent large expenditures in new-plant construction. This has had the twofold effect of unnecessarily tying up capital in new permanent assets while making certain properties in the original capitalization more or less obsolete, thereby reducing the value of the securities issued at the time of organization. I could cite cases of mergers actually consummated, in which this problem having been overlooked, or not squarely met at the proper time, resulted in unanticipated revamping of the whole factory program or the establishment of extensive branch and warehouse organizations to improve distributing facilities. This is not only a matter of capital—capital tied up permanently—but also one that involves many items of overhead expense.

In view of labor conditions, labor costs, freight rates, exigencies of distribution and so on, a merger may necessitate radical rearrangements of manufacturing, whereby production of a particular class of products can be concentrated in one plant and production of a variety of products consolidated in another. Where this is the case, the inevitability of manufacturing problems and outlays for more or less extensive plant changes should be taken into account while the amalgamation is still in its prospective stage.

Subsequent Sales Policies?

Concerns that contemplate merging on the basis of producing somewhat similar lines of merchandise must give sufficient thought to the very practical question of differences in quality and prices. Such differences may have made the lines quite unrelated in a seemingly competitive field. Also, it may be that most of the sales of one or more of the companies are to large customers such as mail-order houses, chain stores, or wholesalers. Sales policies that the merged business would have to adopt might easily make volume or earnings, or both, less than originally expected.

Merging Is Not a Panacea

It is all too easy to assume that by combining several companies, great economies in many directions can be effected. But this does not always work out in practice. It frequently happens that expected savings are rather negligible in the final result. Often, such economies as are realized are more than offset by new general administrative expenses which must necessarily be absorbed in the combined profits of the individual units. Well-intended centralized control of units sometimes amounts to interference with their efficiency and retards the development of local talent. So I regard the proposed general administrative organization, and its probable cost, as a factor which should be given more serious thought than it often appears to receive in the present merger movement.

Economic soundness of a consolidation depends materially upon the economic soundness of its constituents and whether or not their relations with each other will be satisfactory. When a concern joins a merger, it goes into partnership with all the other members. Each should consider the desirability of the others and whether they can work harmoniously together for the combined good of all.

Merging operations, well-conceived and capably worked out, are productive of a great number of real benefits, and among them is one that I wish particularly to mention. The large enterprise arising from a merger is likely to have resources for organized *research* which the companies individually could not afford. The merged business by retaining trained engineers, chemists, statisticians, market analysts and so on, and having the work properly directed, becomes able to reach further, and with a stronger arm, for the improvements essential to its progress.

I am not claiming any particular credit for bringing these matters to your attention, but I do insist that they are of prime importance and involve some of the present-day economic problems which must be met by organizations both old and new.

Mergers, in themselves, are no panacea for diminishing returns on investment. Any concern entering one on a contrary theory is liable to be disappointed. Again, I believe that unless there is a sound reason for a merger, and a sound basis—all plainly discernible in the form of definite prospective benefits—then the companies, in most cases, are better off operating independently.

Next in importance to the factor of soundness is the question of management. Management implies leadership. Leadership

includes acceptance of responsibility, coordination of effort, development of new ideas and ideals, and the perfecting of organization. It consists of all that this Association stands for. The future of almost any consolidation depends greatly upon the kind of management that it gets. The first year or two will, in all probability, be accompanied by many unusual problems requiring tact, resourcefulness and judgment. These are only a few of the qualities which we expect in the highest degree from good management.

First, the project must have a prospective executive head who not only has the knowledge and ability to direct the affairs of the combined group, but also commands the confidence and respect of all the participants. I have seen proposed mergers fail for want of an able leader. Sometimes it is necessary to go outside the participating companies to find the desired executive head. The entire personnel should be considered, which means a selection of the best material for all the executive positions. It is not a matter of finding jobs for men, but of finding and making men for jobs. Next, the management of the local individual units should be carefully planned, with a view to perpetuating each unit's successful operation. If any important executives or employees are to retire, it is important to know the reason for their retirement and gauge its probable effect on the future of the business.

Surplus Executive Talent

A merger of sound compaines—whether or not the merger itself is sound—is very apt to create an embarrassing surplus of desirable executive talent. The question of what to do with these men is an exceedingly important one. If executive authority in a department be divided, the possibility of inevitable friction will exist. If the surplus ability be carried along in such a way that friction will be avoided, the consequent overhead will reduce the economies that should result. The key executives in companies to be merged usually have groups of employees under them, doing responsible work. Some of these subordinates are affected by each selection made between two or more key men for one of the positions in the merger. If discord be aroused, one or more of the executives with their personal following may start a competing company or accept positions with competitors. While these troubles are controllable, they have many times led to undesirable results and should be recognized for what they are.

Surface Contradictions

In giving thought to the factor of management, we should not ignore that many corporations today, whose management and organization are not of the highest grade, are, nevertheless, strongly fortified and go forward from year to year with apparently satisfactory results. This seeming controversion of the importance of good management is often nourished by returns on valuable patents, established trade names, or very fortunate holdings in basic materials; or even by a policy of manufacturing and selling staple goods at a ridiculously small margin of profit. There are various wealthy corporations, owned by families or small groups, with no market for the shares and little incentive to increase dividends. In many such cases, the management is able to operate without the alertness and the urge to improve its showing, which are enjoined under different conditions.

Financial Position

If the proposed merger appears economically sound from every important angle, and is assured of thoroughly capable management, the next important factor to consider is financial position. The project should have the financial facilities and the backgrounds, which will enable it to exert itself to the fullest advantage. Its capital should be adequate; its working capital, ample to meet the demands of its regular business and normal expansion, and provide a satisfactory ratio of current assets to current liabilities. If in the judgment of the sponsors of the amalgamation, some major expansion is probable, it should be provided for. If the project involves the question of assuming the unproductive assets or funded debt of constituent companies, the extent to which this would be wise, merits serious inquiry and study. The new business ought not to be burdened with such assets, debts, commitments and so on that would in any way jeopardize its success.

Therefore, the financial position of each company under consideration for a merger should be determined and analyzed. Excess plant and obsolete facilities should be known, so that proper treatment can be accorded them. Merchandise inventories should be valued only on a basis which will result in a reasonable and normal profit when sold. Contingent liabilities commitments, pending litigation and any contractual liabilities should be fully ascertained. It is usually desirable to have the properties of all the companies appraised by the same appraisers, as the valuation of assets should be consistent and on a uniform basis.

Earnings

The most important financial figures are those which represent the earnings for prior periods. I mean not only earnings as actually shown by the books of the individual concerns, but also earnings as they would have been under the conditions that would have existed, had the concerns been operating as constituents of the proposed merger. If after such adjustment a concern shows no earnings, and is not needed for some special purpose, it is generally a poor prospect for a merger. If the earnings have been on a downward trend, the reason should be ascertained; because declining earnings alone might make a proposed participant undesirable. Any extraordinary income and expenses should be carefully considered and possibly eliminated in determining the earning power.

The ratio of earnings to asset values, particularly to fixed assets, serves as a valuable guide toward ascertaining to what extent, if any, excess plant facilities or other unproductive assets are carried by the participants.

Above all, the earnings of the individual concerns should be determined on a uniform basis; that is, the same policy should apply to all of them, with respect to inventories, depreciation, salaries, reserves and so on.

Formula or Plan of Merger

After the determining factors have been considered and the merger is felt to be desirable, a formula or plan of merger must be worked out and agreed upon. This will indicate the proportionate value of each participant's contribution and the form of compensation that each is to receive. To find the plan that will be acceptable to all participants is frequently quite difficult. There is no pattern that can be generally adhered to. The formula obviously must be fair to all; should be developed in the light of all the factors entering into the determination of the relative values, so that the resulting basis of distribution to the previous owners will be accurate and just.

The formula will naturally be influenced by immediate requirements and by the plans for the future. If it is found necessary to raise cash through sales of securities to meet the conditions under which a merger is formed, expert banking advice is needed. In fact, no merger of any consequence should be undertaken with out the guidance of a competent banker. Experienced judgment is required as to the market for the flotation of securities and the type which will be attractive to the investor and sound for the newly merged company. This question gives rise to others, such as having the securities eligible for listing on recognized stock exchanges.

It is apparent that before any proper plan of merger is attempted, the needs and desires of the participants must be known. With this information as a basis, it is usually possible to evolve a plan that will meet all requirements.

The principals who take part in merger discussions should approach the subject with a broad and open mind. Much will be gained if the atmosphere be clear of all prejudice, precon-

ceived opinions whether favorable or unfavorable, if the first thought of every one be simply to see the proposition clearly in its major aspects. It is essential that each participant have the vision necessary to determine the benefits of a desirable consolidation and not give undue weight to minor factors. There should be a mutual willingness to appreciate the other man's point of view. No two businesses are exactly alike, and when we add to this the justifiable pride which each one has in his own property, it is apparent that if the work of consummating a merger is not leavened by a willing spirit of give and take, it may well be impossible.

There is much to be said in favor of full and frank discussion between all parties. It enables every one to become properly acquainted with the proposition, and guards against misunderstandings, or lack of understanding, which is so undesirable and which in our experience has been a seriously impeding factor when the final negotiations are about to be consummated.

Merger discussions call for breadth of viewpoint and judgment. A study of the successful combinations of the past, of which there are so many, provides ample illustration of the vision and resourcefulness of the men who made them possible.

Special Committees

It often happens that one company in a merger movement may be represented by an able financial executive who may comprehend the financial program fully and quickly. This may not be the case with the representative of another company, who may be an executive more trained in production, engineering or sales. Frequently, the course of the meetings has been simplified by forming special committees to study and discuss the various important phases of the program, each company appointing a separate representative to serve on each of the several committees. In this way, means are afforded whereby each company could feel that it had received the benefit of all discussions which are so necessary in arriving at a clear picture of such an important proposition as merging one business with another.

However, there is no standardized procedure. What may seem most desirable in one merger may not have application in another. But this much can be said more definitely: the participants should approach a merger with an open mind, reserving advance objections until a reasonable period has elapsed for full and frank discussion.

Importance of the Budget

To combine detached businesses, and combine them well, is a great deal more than any problem in arithmetic. It is a direct challenge to the keenest kind of judgment and foresight. Working out a merger should always imply that the elements of a sound operating plan are being conceived and developed. But this general plan in the minds of its authors is only a starting point. It must be rounded out and interpreted on paper; set forth in the form of carefully prepared estimates and schedules, as a guide to accomplishment and a medium for coordination and control. The management of a newly merged business must fix responsibilities, weld sales organizations, rearrange manufacturing, establish consistency of policy; in general, put its house in order to effect the purposes and economies expected. The management will have too much to do to have its work further complicated by the lack of a well-ordered plan or *budget* of operations and expenditures—by any necessity for guessing about day to day and month to month accomplishment.

The budget, applicable as it is in all business, is indispensable in one newly merged. Under the budget plan, the scope and responsibilities of each department are clearly defined. The spending of money is governed by appropriations based on the aims and actual needs of the business. Production and buying are coordinated with sales in an orderly way toward the accomplishment of rapid turnover and the proper regulation of inventories; while the treasury department functions in the light of a forecast of cash to be received and obligations to be met. By no other means than through an earnest attempt to establish and operate a budget, may management so quickly come to a realization that there are deficiencies in its form of organization or personnel, because successful budgeting depends so much upon good organization.

As soon as a merger is finally agreed upon, the first thought should be "Budget." Obviously, the newly merged business will not be able to prepare its budget accurately or as much in detail as will later be the case. But despite this, it will be valuable, and as time goes on it should develop into one of the greatest single contributions to the company's success.

International Influences

It is safe to say that very few businesses are not affected by international influences today. Since the termination of the Great War, foreign markets have taken an increasing volume of American merchandise and many of our leading industries have developed extensive international relations. This is really a great problem unto itself. No large enterprise would be built on a firm rock if 50% or more of its production went to one customer or to one community. It has been predicted that the time will come when it will not be considered sound unless a business includes among its customers a substantial percentage of export trade to many different countries.

The question is indeed a factor to be considered in working out mergers. It calls upon the American manufacturer to study the habits, tariffs, laws and methods of foreign peoples. It requires him to understand the difference in labor conditions, overhead expenses and cost of raw materials abroad. Without a complete understanding and a harmony of ideals, business relations in foreign fields can be no more successful than they are in domestic markets approached haphazardly. Various companies are already establishing themselves in foreign countries through subsidiaries, representing large capital outlays and requiring complete organizations.

A Market Abroad for Securities

I do not wish to venture a prophecy, but it seems reasonable to believe that the time is not far distant when many such companies will find it desirable to create a market abroad for their securities, so as to benefit through ownership and the simplification of banking features involved. Certain European countries will always absorb a large amount of American securities. The listing of such securities on international exchanges should facilitate transactions of this kind; may even assist in popularizing locally the products of companies so listed.

In General

The factors to consider in working out mergers may properly include every phase of the merger movement. If a merger project be sound, if the participants are in earnest and prepared to be fair-minded, there should result another contribution to business progress.

Ice Handicaps Crown-Willamette Mill

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., February 7, 1930.—The Crown-Willamette Paper Company's mills at Oregon City were inconvenienced seriously by the recent extreme cold weather in Oregon and the freezing of the Willamette river on which their plant is located. Though faced with a shut-down this was avoided. However the channel had to be blasted through the ice in the river above the falls to a length of 3000 feet and a width from 150 to 200 feet, by setting off 30 blasts of explosive simultaneously, accomplished under supervision of expert powder men brought to the place for the purpose.

The company' boat Claire and the digger, both above the falls, had to be blasted free. Log rafts were kept free with blasts underneath them. The entire jam was about three miles long and varied from 10 to 20 feet in depth, affecting all industries along the water front.

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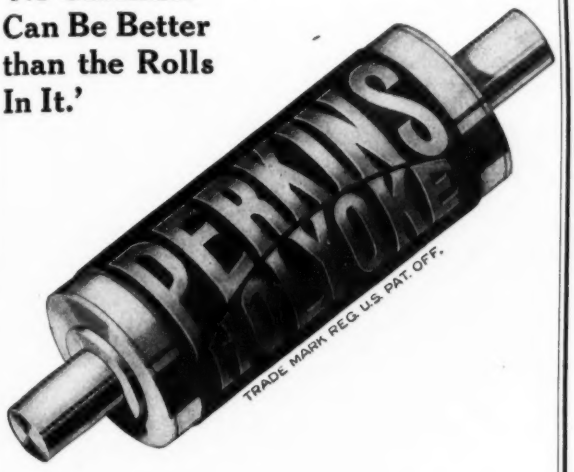

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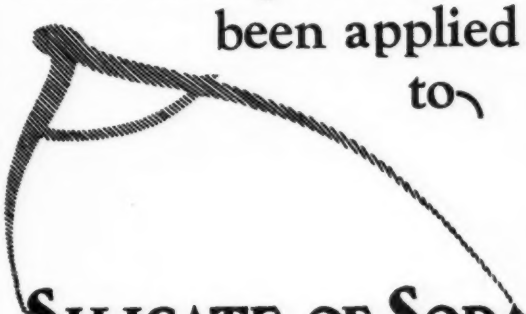

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Articles in The Cost Section of The Paper Trade Journal During 1929

Jan. 3—"Sales Cost Accounting," By Henry S. Dennison, president, Dennison Manufacturing Company. "Material Records and Inventory Planning," Prepared by Research Committee Toledo Chapter, N. A. C. A.

Jan. 10—"Inventory Planning, Taking and Valuation," By W. D. Bonthron Price, Waterhouse & Co.

Jan. 17—"Some Dennison Plans and Practices Affecting Labor Turnover," By M. F. Carpenter, Asst. Employment Mgr., Dennison Manufacturing Company, Framingham, Mass.

Jan. 24—"Employee Securities Purchase Plans." "Revision of Present Calendar Badly Needed," by M. B. Folsom, Eastman Kodak Company, Rochester, N. Y.

Jan. 31—"Inventories and the Auditor," by Maurice E. Peloubet, C. P. A., N. Y. City.

Feb. 7—"Bank Credit and Budgetary Control," by Michael H. Cahill, Pres. Utica National Bank and Trust Company. "The Budget as a Business Compass," by John F. Putnam, Comptroller, Holeproof Hosiery Co., Milwaukee, Wis.

Feb. 14—"The Engineer and Cost Accountant," by T. W. Eustis, Frigidaire Corporation, Dayton, Ohio.

Feb. 21—"Business Outlook for 1929," by Dr. E. O. Merchant, Mead Sales Company.

Feb. 28—"Effect of Mergers on Manufacturers' Problems," by James O. McKinsey, James O. McKinsey & Co., Chicago.

Mar. 7—"Recent Changes in Income Tax Law and Procedure," by Henry B. Fernald, Loomis, Suffern & Fernald, New York City.

Mar. 14—"Plan Your Work and Work Your Plan," by H. G. Crockett, C. P. A., Scovell, Wellington & Co., New York City.

Mar. 21—"Cost Finding and Estimating," by D. A. Wilcox, Oxford Paper Company, New York City. "Higher Wages—Lower Costs," by L. V. Estes, Inc., Chicago, Ill.

Mar. 28—"Depreciation Reserve Funds and Reproductive Values," by Thomas J. Burke, C. A. "The International Fixed Calendar—What It Is and Why We Want It," by Seth L. Bush, Manager Research Dept., Crocker-McElwain Company, Holyoke, Mass.

Apr. 4—"Association Statistics in the Paper Industry," by J. A. C. Kavanagh, statistician, American Paper & Pulp Association. "Cost Facts and Tariff Making," by Warren B. Bullock, Manager, Import Committee, New York. "Depreciation in the Lumber Industry," by A. L. Andrus, C. P. A.

Apr. 11—"Gold Standard is Far From Being Stabilized," by E. W. Kemmerer. "List of Articles which were printed in the 'Cost Section' during 1928."

Apr. 18—"The Reconciliation of Furnish to Production on a 'Bone-Dry' or 'Air-Dry' Basis," by W. M. Fischer, Curtis & Bro., Inc., Newark, Del. "Knowing Your Business Inside and Out." "Should Study Anti-Trust Statutes."

Apr. 25—"How to Control Your Budget," by Edward W. Meyer, Gen. Auditor, Southwestern Bell Telephone Company.

May 2—"Assessing the Factory," by Philip Nichols, Chairman, Mass. Taxpayers' Conference Committee. "Facts—The Guides of Business Today," (A Simple Method of Forecasting Sales).

May 9—"Capacity and Costs," by Thomas J. Burke, C. A.

May 16—"Insurance Applicable to Balance Sheet Items," by William B. Wiegand, Chief Examiner of Insurance Companies of N. J. "Human Power is Still the Biggest Factor in Cost," By J. A. Scanlon, Springfield Provision Company, Chicopee, Mass.

May 23—"Economic Changes Revealed Through Unemployment Conference."

May 30—"Cost Control in Pulp and Paper Mills," by L. V. Alden, Thompson & Lichtner, Inc., Boston, Mass.

June 6—"Industrial Pensions and Wages," by John Whitmore.

June 20—"Profit Sharing—An Incentive Plan for Executives," By C. C. Balderstom, Assistant Prof. of Industry, Univ. of Pennsylvania, Phila, Pa. "Economics and Plant Location," By W. Gerald Holmes, Industrial Eng., National Electric Power Co.

June 27—"Inspecting the Works of the Sherman Act," By James Harvey Williams, President, J. H. Williams & Co.

July 4—"Financial Aspects of Industrial Pension," By Bryce M. Stewart, Industrial Relations Counselors, Inc.

July 11—"Financial Aspects of Industrial Pensions," By Bryce M. Stewart (Continued from previous week's Cost Section.)

July 18—"The Research Laboratory and Cost Reduction," By Earl P. Stevenson, vice-president and director of Research, Arthur P. Little, Inc., Cambridge, Mass.

July 25—"Time as a Cost Factor in the Pulp and Paper Industry," By Thomas J. Burke, C. A. "The Five Day Week in American Industry"—From National Conference Board Bulletin.

Aug. 1—"Cost Reduction Through Research Department," By William S. Wheeler, Jr., Research Director, McCallum Hosiery Company, Northampton, Mass.

Aug. 8—"Accounting for Forests Under Sustained Yield Management," By Bernard A. Chandler & Frank A. Linzel C. P. A., N. Y. & N. J.

Aug. 15—"Standard Cost," By Harold E. Parkman, F. C. Huyck & Son, Kenwood Mills, Albany, N. Y.

Aug. 22—"Manufacturers and Marketing Trends," By J. L. Palmer, Assistant Professor of Marketing, University of Chicago.

Aug. 29—"Accounting from the Management Viewpoint," By Monard V. Hayes, Consulting Management Engineer.

Sept. 5—"Fiscal Aspects of the State Income Tax Since 1918," By Truman C. Bigham, University of Arkansas.

Sept. 12—"Reducing the Costs of Distribution," By Robert F. Elder, Specialist in Market Research, Brown Co.

Sept. 19—"Capital Facilities," By Frederic W. Kilduff, Remington, Rand Business Service, N. Y. C.

Sept. 26—"What Has Happened to the Manufacturer's Marketing Status?", By Marquis Regan, Pres. Marquis Regan, Inc. "Analyzes Accountant's Responsibility for Correctness of Inventory," By W. Fort Jackson, C.P.A.

Oct. 10—"Burden Variance in Relation to Production," By George F. Mellon, Associate Professor Industrial Engineering, Pennsylvania State College, State College, Pa.

Oct. 17—"Accruing Pensions as a Part of Current Operating Cost," by Ingalls Kimball.

Oct. 24—"Value of Cost Conventions," By C. A. Jasperson, Secretary Nekoosa-Edwards Paper Company. "Use of Standards in Paper Mill Accounting," By Charles O. Passmore, C.P.A., Frazer & Torbet, Chicago, Ill. & Milwaukee, Wis.

Nov. 7—"Technical Control in the Paper Mill as to Cost," By G. F. Enderlein, Chief Chemist Mosinee Paper Mills.

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Mosinee, Wis. "Should Depreciation Rates Be Standardized in the Pulp and Paper Industry?" By Frank W. Jackson, American Appraisal Company, Milwaukee, Wis.

Nov. 14—"Success of Mergers and Accountants," By A. J. Peel. "Factual Management vs. Keener Competition," By Edward N. Hurley, Chairman of the Board, Electric Household Utilities Corpn.

Nov. 21—"Control in Management," by L. C. Reynolds, Comptroller, American Writing Paper Company. "Taxes and Corporations," By Thomas J. Burke, C. A.

Nov. 28.—"The Development of Uniform Cost Accounting Through Trade Associations."

Dec. 5—"Financing in Pulp and Paper Mills," By Newton V. Wagner, C.P.A., Arthur Andersen & Co., Chicago, Ill.

Dec. 12—"Accounting for Selling and Distribution Expenses," By James L. Palmer. Associate Professor of Marketing, The School of Commerce and Administration, University of Chicago.

Dec. 19—"The Depreciation Element in Burden Estimates," By Prof. J. B. Canning, Associate Professor of Economics, Stanford University, Palc Alto, Cal.

Dec. 26—"Bonus Systems and Setting of Standards in Pulp and Paper Mills," By J. P. Hagenauer, L. V. Estes, Inc., Chicago, Ill. "Rated Machine Capacities and How Compiled," By C. R. Whipple, Beloit Iron Works, Beloit, Wis.

Recent Paper Publications

The Bureau of Standards, Washington, D. C., announces that reprints of Research Papers No's. 85 (5 cents) and 107 (15 cents), published in the bureau Journal of Research, are now available for purchase from the Superintendent of Documents, Government Printing Office, Washington, D. C. Research Paper No. 85, "A Study of Sheathing Papers," by F. T. Carson and F. V. Worthington, gives the results of tests of the various types of papers used for this purpose, made to assist the National Lumber Manufacturers' Association in their standardization of building material. Research Paper No. 107, "A Study of Prified Wood Fibers as a Paper-Making Material," by R. H. Rasch, reports the results so far obtained in comparative laboratory tests of highly purified wood fibers and the other common paper-making fibers, in respect to the relative quality of papers made from them.

A limited supply of reprints of the article, "A Study of Fiber Wall Boards for Developing Specification Standards," by B. W. Scribner and F. T. Carson, published in PAPER TRADE JOURNAL, September 26, 1929, have been received from the publisher, and single copies will be furnished without charge on request made to the bureau. This gives the results of a research made to assist in the formulation of purchase specifications for fiber wall board. Recommendations in this respect are included.

"A Historical Sketch of the U. S. Bureau of Standards Paper Mill," by B. W. Scribner, was published in Superior Facts (Paper Makers Chemical Corporation, Holyoke, Mass.) This is a brief history of the mill from its establishment in 1910, to the present year.

Zeloid Products Corp. Offered Mill Site

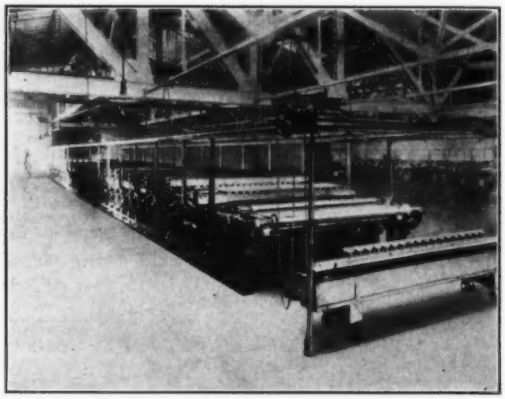
[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., February 4, 1930.—The Zeloid Products Corporation, Inc. has received an offer from a group of Hartford citizens of a mill site and large subscription to stock if they will remove to that city. This concern has taken over a part of the Riverside Division of the American Writing Paper Company, Inc., and is endeavoring to get the first unit in operation as soon as practicable. At the annual meeting held a few days ago it was voted to increase the number of directors from seven to eleven and Otto M. Dreikorn was added to the list.

Machine for Printing Floor Covering

Modern floor coverings which consist usually of a linseed oil or other suitable plastic composition laid upon a fabric base, are printed flat which, together with the multiple color effects and complicated designs employed, and the great width of the material, requires a large and complicated machine.

The accompanying photograph shows such a machine, built by Dienelt & Eisenhardt of Philadelphia, and installed in the plant of the Sandura Company, Paulsboro, N. J., manufacturers of felt base floor coverings. It will accommodate fabrics 12 quarters wide, equivalent to 9 feet, and is designed to make 15 different impressions upon the body, and a like number upon the border. The whole machine is mounted upon wheels running on rails laid across the floor so that it can be shifted to deliver the printed material into any one of a number of ovens wherein the final hardening or drying takes place.



MACHINE FOR PRINTING FELT BASE FLOOR COVERINGS

The material is drawn through the machine with an intermittent motion, which is synchronized with the action of the printing blocks, so that the fabric is stationary at the moment when it receives each impression. As the fabric comes to rest under the printing heads, the latter are automatically lowered and raised by cams ,each head impressing a design in one color upon the material. The paint is transferred to the printing heads by paint wagons, which shuttle under the heads while the latter are at the top of the stroke. The cams operating the printing heads are driven through 30 DeLaval worm reduction gears, each having double gear shaft extensions and double worm shaft extensions.

The worm shafts are connected together in series by flexible couplings to form, in effect, a continuous line shaft, which is driven from a 40 hp. 1160 r.p.m. motor by a silent chain and a special combination of worm and small helical gear built by the DeLaval Steam Turbine Company of Trenton, N. J., and giving a combined reduction ratio of approximately 120 to 1. Another DeLaval gear transmits the power for travesing the machine. The high efficiency of the gears, of which there are 31 altogether, besides the traversing gear, and the precision of construction of the printing machine, is shown by the fact that one man can easily turn the drive shaft operating the entire machine.

To Discontinue Use of Word Mills

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 12, 1930.—Co-partners selling and distributing paper and twine have signed a stipulation with the Federal Trade Commission agreeing to discontinue in their trade name the use of the word "mills." This use of the word was held to have a tendency to deceive the public into believing that the respondents own or operate a factory where they manufacture the products sold by them. The name of the stipulators, as is general in cases of this kind, has been withheld from publication.

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IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING FEBRUARY 8, 1930

SUMMARY

Cigarette paper .....1878 cs.
Wall paper .....223 bls., 100 cs.
Paper hangings .....2 trusses, 15 bls., 49 cs.
News print .....4510 rolls
Printing paper ..... 46 rolls, 81 bls., 62 cs.
Wrapping paper .....71 cs.
Packing paper .....86 cs.
Silk paper .....8 cs.
Caoutchouc paper .....8 cs.
Tissue paper .....33 cs.
Filter paper .....7 cs.
Filter pulp .....20 bls.
Drawing paper .....12 cs.
Colored paper ..... 47 bls., 40 cs.
Surface coated paper .....138 cs.
Baryta coated paper .....166 crates
Basic paper .....18 crates
Coated paper .....9 cs.
Metal paper .....2 cs.
Decalcomania paper .....41 cs.
Transfer paper .....39 cs.
Transparent greaseproof paper .....8 cs.
Parchment paper .....20 bls., 1 cs.
Writing paper .....18 cs.
Aluminum paper .....18 cs.
Envelopes .....12 cs.
Bowl paper .....8 bls.
Stencil paper .....17 cs.
Card board .....100 cs.
Miscellaneous paper .....23 bls., 229 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Collamer, Havre, 404 cs.
De Manduit Paper Corp., Vincent, St. Nazarie, 441 cs.
American Tobacco Co., Vincent, Bordeaux, 850 cs.
Liggett & Myers Tobacco Co., Ile de France, Havre, 35 cs.
Max Spiegel & Son, Milwaukee, Hamburg, 8 cs.
P. J. Schweitzer, Pr. Van Buren, Marseilles, 140 cs.

WALL PAPER

Globe Shipping Co., G. Washington, Hamburg, 65 bls., 8 cs.
R. F. Downing & Co., Minnekahda, London, 26 bls., 9 cs.
F. A. Binder, Dresden, Bremen, 10 bls., 2 cs.
——, American Banker, London, 2 bls.
A. C. Dodman, Jr., Inc., Aquitania, Southampton, 3 bls., 1 cs.
R. F. Downing & Co., Aquitania, Southampton, 14 cs.
F. J. Emmerich, Doric, Liverpool, 42 bls., 2 cs.
F. P. Emmerich, Milwaukee, Hamburg, 65 bls., 3 cs.
Globe Shipping Co., Milwaukee, Hamburg, 40 bls., 8 cs.
Guaranty Trust Co., Milwaukee, Hamburg, 53 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnekhda, London, 15 bls., 13 cs.
W. H. S. Lloyd & So., Antonia, Liverpool, 2 truesses.
W. H. S. Lloyd & Co., Ile de France, Havre, 22 cs.
C. Grimmer & Son, Ile de France, Havre, 1 cs.
F. L. Kraemer & Co., Aquitania, Southampton, 4 cs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 9 cs.

NEWS PRINT

A. S. Zabriskie, G. Washington, Hamburg, 67 rolls.
Parsons & Whittemore, Inc., Dresden, Bremen, 812 rolls.
The Star Co., Markland, Liverpool, N S., 1603 rolls.
N. Y. Tribune, Inc., Markland, Liverpool, N. S., 1739 rolls.
Clinton Paper Co., Markland, Liverpool, N. S., 289 rolls.

PRINTING PAPER

P. C. Zuhlke, Samland, Antwerp, 26 cs.
Keuffel & Esser Co., G. Washington, Hamburg, 46 rolls.
Perkins, Goodwin & Co., Milwaukee, Hamburg, 81 bls.
E. Dietzgen & Co., Veedam, Rotterdam, 32 cs.
International F'd'g. Co., Veendam, Rotterdam, 4 cs.

WRAPPING PAPER

Standard Products Corp., Samland, Antwerp, 12 cs.
Sylvania Industrial Corp., Samland, Antwerp, 59 cs.

PACKING PAPER

American Express Co., Milwaukee, Hamburg, 86 cs.

SILK PAPER

Whiting & Patterson Co., Inc., Veendam, Rotterdam, 8 cs.

CAOUTCHOUC PAPER

American Express Co., Milwaukee, Hamburg, 8 cs.

TISSUE PAPER

G. W. Sheldon & Co., American Banker, London, 5 cs.
F. B. Vandergrift & Co., Antonia, Liverpool, 10 cs.
F. C. Strype, Antonia, Liverpool, 12 cs.
Globe Shipping Co., Ile de France, Havre, 4 cs.
W. J Byrnes, Aurania, Southampton, 2 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Aurania, Southampton, 7 cs .

FILTER PULP

A. Giese & Son, Milwaukee, Hamburg, 20 bls.

DRAWING PAPER

Keuffel & Esser Co., G. Washington, Hamburg, 12 cs.

COLORED PAPER

Borden Riley Paper Co., Samland, Antwerp, 13 cs.
Henschel Naeve Co., G. Washington, Bremen, 30 bls., 3 cs.
——, Dresden, Bremen, 12 cs., 17 bls.
J. Beckhard & Co., Dresden, Bremen, 10 cs.
S. Gilbert, Dresden, Bremen, 2 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Samland, Antwerp, 133 cs.
Phoenix Shipping Co., Milwaukee, Hamburg, 5 cs.

BARYTA COATED PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 166 crates.

BASIC PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 18 crates.

COATED PAPER

Pacific National Bank, Milwaukee, Hamburg, 9 cs.

METAL PAPER

Laub Hummel & Schnall, Milwaukee, Hamburg, 2 cs.

DECALCOMANIA PAPER

C. W. Sellers, Dresden, Bremen, 8 cs.
C. W. Sellers, Milwaukee, Hamburg, 4 cs.
B. F. Drankenfeld & Co., Antonia, Liverpool, 29 cs., (duplex).

TRANSFER PAPER

F. L. Kraemer & Co., Dresden, Bremen, 39 cs.

TRANSPARENT GREASEPROOF PAPER

Central Hanover Bank & Trust Co., Milwaukee, Hamburg, 8 cs.

PARCHMENT PAPER

Gevaert Co. of America, Samland, Antwerp, 1 cs.
Walker, Goulard, Plehn Co., Milwaukee, Hamburg, 20 bls.

WRITING PAPER

American Express Co., Collamer, Havre, 2 cs.
C. A. Redden, Collamer, Havre, 1 cs.
Distinctive Writing Paper Co., Ile de France, Havre, 9 cs.
Coenca Morrison Co., Ile de France, Havre, 5 cs.
Japan Paper Co., Ile de France, Havre, 1 cs.

ALUMINUM PAPER

Catty Foil Co., Dresden, Bremen, 18 cs.

ENVELOPES

J. Beckhard Co., Dresden, Bremen, 12 cs.

BOWL PAPER

Hurley Johnson Corp., Antonia, Liverpool, 8 bls.

STENCIL PAPER

International F'd'g Co., Milwaukee, Hamburg, 3 cs.
Arlac Dry Stencil Co., Milwaukee, Hamburg, 14 cs.

CARD BOARD

American Express Co., Milwaukee, Hamburg, 100 cs.

MISCELLANEOUS PAPER

Haule Wax Paper Manfg. Co., Dresden, Bremen, 27 cs.
Vogue Hats, Ile de France, Havre, 2 cs.
Guibout freres, Ile de France, Havre, 9 cs.
F. N. Fairbanks Co., Ile de France, Hamburg, 22 cs.
Kensington Wallpaper Co., Ile de France, Havre, 3 bls.
Standard Products Corp., Ile de France, Havre, 72 cs.
Keller Dorian Paper Co., Ile de France, Havre, 20 cs.
F. L. Kraemer & Co., Ile de France, Havre, 14 cs.
F. S. Lux, Milwaukee, Hamburg, 13 bls.
Kensington Wallpaper Co., Milwaukee, Hamburg, 4 bls.
P. H. Petry & Co., Milwaukee, Hamburg, 3 bls.
Wilkinson Bros. & Co., Inc., Pr. Van Buren, Genoa, 17 cs.
——, Pr. Van Buren, Genoa, 48 cs.

RAGS, BAGGINGS, ETC.

V. Galaup, Exmouth, Leghorn, 15 bls. cuttings.
Castle & Overton, Inc., Tubingen, Bremen, 38 bls. rags.
A. W. Fenton, Inc., Tubingen, Bremen, 57 bls. rags.
Wilkinson Bros. & Co., Inc., London, Merchant, London, 5 bls. waste paper.
Belgam Corp., Collamer, Dunkirk, 60 bls. rags.
R. F. Downing & Co., Minnekahda, London, 75 bls. rags.
Baring Bros. & Co., Cameronia, Glasgow, 55 bls. paper stock.
Brown Bros. & Co., Cameronia, Glasgow, 76 bls. rags.
——, Cameronia, Glasgow, 172 bls. rags.
International Accep. Bank, Dresden, Bremen, 80 bls. linen waste.
Merchants National Bank, Dresden, Bremen, 55 bls. rags.
Leigh Textile Co., Austvard, Barcelona, 128 bls. cotton, waste.
Darmstadt, Scott & Courtney, Austvard, Barcelona, 205 bls. bagging.
S. Birkenstein & Son, Austvard, Valencia, 71 bls. rags; 66 bls. jute waste.
The Barrett Co., Vincent, Bordeaux, 292 bls. rags.
A. W. Fenton, Inc., Vincent, Bordeaux, 416 bls. rags.
Royal Manfg. Co., Saco, Rotterdam, 19 bls. cotton waste.
Guaranty Trust Co., West Arrow, Antwerp, 24 bls. rags.
Forte, Dupee, Sawyer, West Arrow, Antwerp, 92 bls. rags.
——, Kyno, Hull, 117 bls. rags.
Albany Fibre Co., Kyno, Hull, 16 bls. rags.
Webster Atlas Natl. Bank, Kyno, Antwerp, 72 bls. flax waste.
Baring Bros. & Co., Kyno, Antwerp, 65 bls. waste.
V. Galaup, Kyno, Antwerp, 21 bls. rags.
Brown Bros. & Co., Kyno, Antwerp, 60 bls. flax waste.
Guaranty Trust Co., Kyno, Antwerp, 142 bls. flax waste.

(*Continued on page 68*)

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Jefferson St. Arcade, Dayton, O.
Guarantee Bldg., Montreal, P. Q.

Imports of Paper and Paper Stock

(*Continued from page 66*)

Irving Trust Co., Kyno, Antwerp, 84 bls. waste.
Intl. Germanic Trust Co., Kyno, Antwerp, 261 bls. rags.
1st National Bank of Boston, Kyno, Antwerp, 60 bls. cotton waste.

OLD ROPE

Banco Com'l Italiane Trust Co., Exmouth, Genoa, 213 coils.
Brown Bros. & Co., Tubingen, Bremen, 62 voils.
Furness Withy & Co., London Merchant, London, 115 coils.
Brown Bros. & Co., Vego, Bristol, 195 coils.
S. Birkenstein & Son, Austvard, Barcelona, 38 coils.
Brown Bros. & Co., Saco, Rotterdam, 35 coils.
Brown Bros. & Co., Milwaukee, Hamburg, 41 coils.
Brown Bros. & Co., Kyno, Hull, 42 coils.

CHINA CLAY

English China Clays Sales Corp., Vego, Bristol, 50 bags.

CASEIN

Crawford, Keen Co., Southern Prince, B. Ayres, 1000 bags, 50000 ks.
A. Hurst & Co., Southern Prince, B. Ayres, 417 bags, 56169 lbs.
Irving Trust Co., Ile de France, Havre, 134 bags.

WOOD PULP

Bulkley, Dunton & Co., Tubingen, ——, 3213 bls. wood pulp.
J. Andersen & Co., Tubingen, Bremen, 2003 bls. wood pulp.
Irving Trust Co. , Tubringen, Bremen, 350 bls. wood pulp.
Castle & Overton, Inc., Saco, Rotterdam, 340 bls. wood pulp, 54 tons.
Lagerloef Trading Co., Minnequa, Helsingfors, 338 bls. sulphite, 50 tons.
Castle & Overton, Inc., Friesland, Hamburg, 7612 bls. wood pulp, 1141 tons.
Irving Trust Co., Friesland, Hamburg, 127 bls. wood pulp, 25 tons.
Castle & Overton, Inc., Milwaukee, Hamburg, 814 bls. wood pulp, 135 tons.
American Express Co., Milwaukee, Hamburg, 300 bls. wood pulp., 50 tons.

WOOD FLOUR

Globe Shipping Co., G. Washington, Hamburg, 20 cs.
State Chemical Co., Saco, Rotterdam, 550 bags, 31550 ls.
State Chemical Co., Veedam, Rotterdam, 600 bags.

PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 8, 1930

V. Galaup, Exmouth, Naples, 80 bls. rags.
V. Galaup, Exmouth, Leghorn, 52 bls. rags.
Castle & Overton, Inc., Exmouth, Marseilles, 64 bls. rags.
Irving Trust Co., Tubingen, Bremen, 77 bls. bagging; 195 bls. rags.
Parsons & Whittemore, Inc., Tubingen, Bremen, 300 rolls news print.
S. E. Ingber, Tubingen, Bremen, 50 bls. rags.
Perkins, Goodwin & Co., Tubingen, Bremen, 38 rolls, news print.
E. Mayer, Tubingen, Bremen, 63 bls. rags.
Irving Trust Co., Tubingen, Bremen, 132 bls. rags.
Bulkley Dunton & Co., Tubingen, ——, 2000 bls. wood pulp.
E. J. Keller Co., Inc., Tubingen, ——, 61 bls. rags
J. A. Steer & Co., Vego, Bristol, 190 coils old rope; 147 bls. waste paper.
English China Clays Sales Corp., Vego, Bristol, 300 tons china clay.
Chemical Bank & Trust Co., Austvard, Marseilles, 96 bls. rags.
P. Berlowitz, Vincent, St. Nazaire, 350 bls. rags.
Castle & Overton, Inc., Vincent, St. Nazaire, 287 bls. rags.
D. I. Murphy, Vincent, St. Nazaire, 213 bls. rags; 10 bls. .bagging.
Belgam Corp., Vincent, St. Nazaire, 447 bls. rags.
Katzenstein & Keene, Inc., Vincent, St. Nazaire, 145 bls. rags.
Bank of New York, Vincent, Bordeaux, 43 bls. rags.
J. A. Steer & Co., Vincent, Bordeaux, 37 bls. rags.
D. I. Murphy, Vincent, Bordeaux, 60 bls. rags.
Katzenstein & Keene, Inc., Vincent, Bordeaux, 161 bls. rags.
A. W. Fenton, Inc., Vincent, Bordeaux, 53 bls. rags.
Pagel, Horton & Co., Inc., Minnequa, Husum, 6000 bls. sulphate, 1000 tons.
E. J. Keller Co., Inc., Cincent, ——, 331 bls. rags.
E. J. Keller Co., Inc., City of Alton, ——, 73 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 8, 1930

National City Bank, Bannack, Liverpool, 73 bls. rags.
Congoleum Nairn Co., Collamer, Havre, 132 bls. rags.
S. Shapiro, Collamer, Havre, 53 bls. rags.
Pagel, Horton & Co., Inc., Minnequa, Husum, 30000 bls. sulphate, 5000 tons.
Lagerloef Trading Co., Minnequa, Helsingfors, 640 bls. sulphite, 108 tons.
Bulkley, Dunton & Co., Tortugas, ——, 3750 bls. wood pulp.
Bulkley, Dunton & Co., Burgerdyk, ——, 900 bls. wood pulp.
Bulkley, Dunton & Co., Etna, ——, 3250 bls. wood pulp.
Bulkley, Dunton & Co., Grelwen, ——, 5550 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING FEBRUARY 8, 1930

Irving Trust Co., West Arrow, Antwerp, 334 bls. rags.
Darmstadt, Scott & Courtney, West Arrow, Antwerp, 57 bls. bagging.
Bank of New York, West Arrow, Antwerp, 168 bls. bagging.
E. Butterworth & Co., Inc., West Arrow, Antwerp, 144 bls. bagging.

BOSTON IMPORTS

WEEK ENDING FEBRUARY 8, 1930

Baring Bros. & Co., Bubian, Manchester, 349 bls. hidecuttings.
International Purchasing Co., Bubian, Manchester, 40 bls. bagging.
Atkinson Haserick Co., Pr. Van Buren, Genoa, 11 cs. paper.
Bulkley, Dunton & Co., Gonzenheim, ——, 9250 bls. wood pulp.

Connecticut Valley Division To Meet

A meeting of the Connecticut Valley Division of the Cost Association of the Paper Industry, will be held at 6:30 P. M., February 24th, at the Hotel Nonotuck, Holyoke, Mass.

The speaker of the evening will be E. Stewart Freeman, who is the chief statistician at the Dennison Manufacturing Company, Framingham, Mass., on the subject of "Marketing Costs." As he is a very interesting speaker and has developed some worth while information along this line, it is hoped there will be a large turn out to hear his address. Both non-member mills, as well as member mills, are invited to attend this meeting.

All reservations should be sent to Paul A. Wilks, at the Strathmore Paper Company, Mittineague, Mass. These should be forwarded as early as possible, in order that satisfactory arrangements may be made with the hotel management.

Wage Negotiations Stopped in Sweden

WASHINGTON, D. C., February 12, 1930.—Negotiations for a renewal of the wage agreement between paper mill owners and their workers, which expired on February 1, in Sweden were broken off the latter part of January according to a report from Commercial Attache Klath at Stockholm.

A newly appointed government mediation commission, however, succeeded in postponing the stoppage of work until February 15, thus allowing additional time for the contestants to come to an agreement. The demands of the workers are reported to involve an increase of more than 20 per cent over the present wage schedules in effect.

Hinde & Dauche Mill Resumes Operation

WATERTOWN, N. Y., February 8, 1930.—The Hinde & Dauch Paper Company resumed operations this week after being shut down for the past six weeks. Operations were resumed early in the week and operations have been gradually increased until virtually the entire working force is again employed. One of the two paper machines is operating on full time schedules.

Officials of the company said the plant was closed because of lack of sufficient orders and with inventory ahead it was necessary to remain shut down for a time. Recently a number of large orders were received which resulted in reopening the plant. It was announced that the other machine will be started in the near future if the present rate of orders continue.

Celotex Co. Report $1,478,590 Net Income

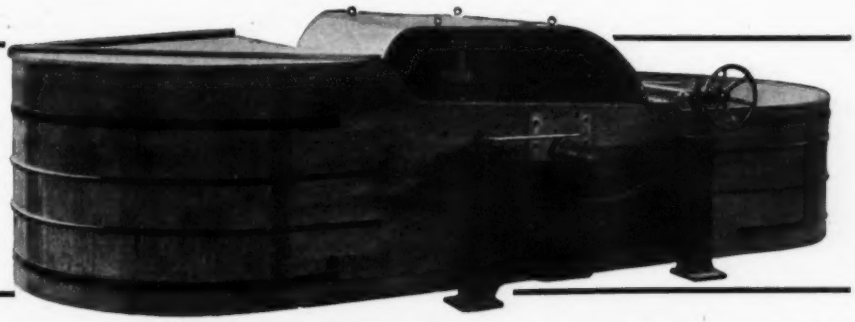
For the year ended October 31 last the Celotex Company reports net income of $1,478,590 after depreciation, interest, Federal taxes and other charges, equivalent after preferred dividend requirements to $6.14 a share on 181,403 average no par shares outstanding, and $5.42 a share on the 205,194 shares outstanding at the end of the year, against $1,380,622 or $6.55 a share on 154,635 common shares at the end of the preceding year.

Government Paper Award

WASHINGTON, D. C., February 17, 1930.—Barton, Duer & Koch Paper Company has been awarded the contract for furnishing the Government Printing Office with 3,200 pounds (10,000 sheets) of 24 x 36 320, high finish red sulphite paper at 9.55 cents per pound, bids for which were received on January 27.

10 low cost Emerson High Density, High Speed Beaters, similar to the one shown are operating in a mill making high grade papers. Name on request.

Write for complete information about Emerson Beaters.



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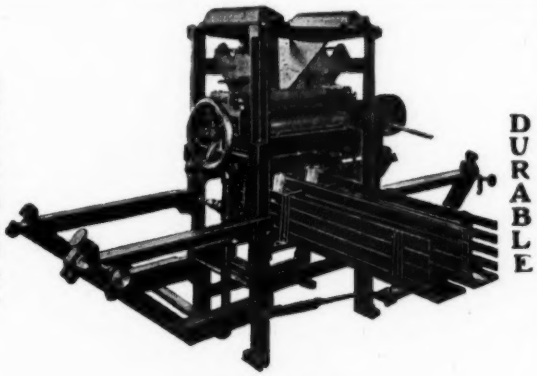

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PROVIDENCE, R. I.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, February 12, 1930.

Some improvement was noticed in the demand for most of the standard grades of paper during the past week. Due mainly to the fact that the spring buying season will soon be in full swing the outlook for the future is more encouraging than of late. Sales forces of the leading paper organizations are particularly active just now. Prices remain unchanged, in most instances.

News print production is being maintained at about 71 per cent of total capacity in North America and the output is being absorbed freely by the publishers. Stocks at the mills are not excessive. The price situation remains unsatisfactory although a speedy solution of the problem is looked for, in some quarters.

Box board production is being maintained in sufficient volume to take care of current requirements. There is no change in the price situation. The fine paper market continues to exhibit a strong undertone. Tissues are moving in satisfactory volume. The coarse paper market is moderately active. Wrapping paper is moving into consumption at a steady pace.

Mechanical Pulp

Steadiness prevails in the ground wood market. The domestic output has been limited of late, due mainly to unfavorable weather conditions. Production abroad has also been curtailed. Offerings of mechanical pulp are naturally somewhat scarce. Prices are holding to previously quoted levels and shading is infrequent.

Chemical Pulp

The chemical pulp market was rather quiet during the week. Shipments against contract are proceeding in a regular manner. Most producers are well sold ahead on several of the grades. No radical price revisions have been reported of late. Imported easy bleaching sulphite is now being offered at from $2.85 to $3.05, on dock, Atlantic ports.

Old Rope and Bagging

Conditions in the old rope market are fairly satisfactory. Quotations have declined slightly. Domestic manila rope is now quoted at from $4.25 to $4.50, while imported manila rope is selling at from $4.25 to $4.40. Mixed rope is fairly steady. The bagging market is in a sound position. Demand for gunny is persistent. Scrap is only in moderate request.

Rags

Paper mill interest in the domestic rag market is improving. Offerings of cotton cuttings are not excessive and prices remain steady and unchanged. Roofing rags are moving in fair volume. Mixed rags are in seasonal request. The foreign rag market is practically unchanged, with dealers abroad still asking high prices.

Waste Paper

Little improvement was noticed in the demand for lower grades of paper stock. However, the trend should be upward when the board mills resume buying to any extent. The higher grades of waste paper are in excellent request. Book stock continues steady. Soft and hard white shavings are going forward at a normal pace for the time of year.

Twine

The position of the twine market is practically unchanged. Demand for the various grades is mostly seasonal. There are a fair number of inquiries around for future business. The contract movement is well up to average. Prices are fairly steady.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 10, 1930.—The Collins Manufacturing Company, Holyoke, Mass., has discontinued the manufacture of Preference Bond and made a reduction on the price of Active Bond. John Carter & Co., Inc., handle Active Bond for this company.

Reports from the State Sanatorium, Rutland, indicate that the condition of Howard Casey, of the Hampshire Paper Company, is steadily improving.

Bert Coy, of the Coy Paper Company, Claremont, N. H., and A. P. Mitchell, of the Warren Manufacturing Company, Ridgefield, N. J., called on the trade here last week.

John D. Zink, general manager of the Eastern States Farmers Exchange, with headquarters at Springfield, Mass., has resigned to become a member of the staff of the Strathmore Paper Company.

J. De Raaij, of Utrecht, Holland, representing the Dutch Rag Exporters' Association, called on the paper stock trade last week, and William Steck, paper stock man, of New York City, was also in town.

The Perkit Folding Box Company, Inc., paper, wood and board box, has been incorporated with 200 shares of common stock of no par value. President, Charles E. Perkit; treasurer, Edward M. Perkit; 102 Floyd street, Boston.

Dilts Machine Works Wins Safety Award

FULTON, N. Y., February 17, 1930.—The Dilts Machine Works, Inc., makers of paper mill machinery, located in N. First street, have been presented with a bronze trophy shield suitably engraved as the result of finishing in first place in a campaign conducted against accidents by the Associated Industries of New York State. This campaign was carried on for three months, September 1 to December 1.

During the period 1,184 firms engaging 292,571 were entered in the contest. The Dilts concern was the largest manufacturer in a group of metal working industries and finished with a percentage of 100. The local company because of its size had a larger number of exposures to accidents and as a result of its standing has gained the distinction of being one of the safest and best manned plants in the state. This is the first time that a trophy of this nature has been won by a Fulton concern. The campaign was the fifth annual one held by the association in its drive against accidents. The trophy will be on display in the Chamber of Commerce show window, Oneida street.

May Build Pulp Mill at Hoquiam

A pulp mill is scheduled for Hoquiam, Wash., pending the election on the water bond issue for the city which will occur March 8. Clarence G. Blagen heads the group which will sponsor the mill, according to report made February 7 from the Hoquiam Chamber of Commerce.

Mr. Blagen has not been able to complete his plans because of the uncertainty of the water supply, although he stands ready to promise raw material and power for operation of such a plant, acccording to P. J. Mourant, spokesman for Mr. Blagen, who was ill and not able to appear before the Chamber of Commerce.

KELLOGG

Forge and Hammer Lap Welded

DIGESTERS

FORGE AND HAMMER LAP WELDED
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Boston Birmingham Chicago Pittsburgh Los Angeles Tulsa
All Kellogg Forge and Hammer Lap Welded Products are insurable

The Leshner Paper Stock Co.

wishes to announce that a change has been made in the corporate name to

THE LESHNER CORPORATION

and request that all communication hereafter be addressed accordingly.
There is no change in directorate nor capitalization.

HAMILTON, OHIO

Ticonderoga Machine Works
Ticonderoga. N. Y., U. S. A.
MANUFACTURERS OF

WARREN IMPROVED CALENDER DOCTORS
With Flexible Blades, Universal Adjustment and Control (PATENTED)

WARREN IMPROVED PATENT DOUBLE DRUM WINDERS

Patent BALL VALVE Hydrant
Stock Circulating Systems and
other Paper Mill Specialties

SEND FOR OUR BULLETIN

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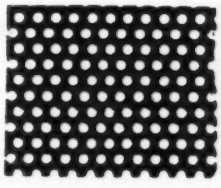
For Pulp and Paper Mills



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".065" Round

CHARLES MUNDT & SONS
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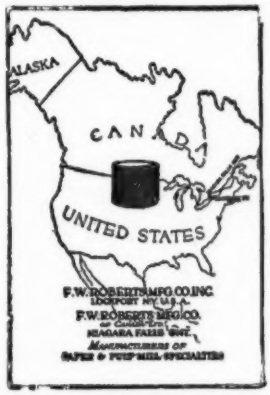
BURRS



BURRS

Red
Brown
Yellow
} Oxides

Talc

Yellow Ochres,
Umbers, Agalite

C. K. Williams & Company
EASTON, PA.
88 Kent Ave., Brooklyn, N. Y.
1500 Southwestern Ave., Chicago, Ill.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, February 12, 1930.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Both the pulp and the powder are in seasonal demand. Prices remain unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is fairly satisfactory. Supplies are moving into consumption in a normal manner. Prices are generally holding to previously quoted levels and shading is infrequent. Bleaching powder is still quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—No radical changes were reported in the casein market. Domestic casein is now quoted at from 14 cents to 16½ cents per pound, while Argentine standard ground is selling at from 14½ cents to 15 cents, and finely ground at from 15 cents to 15½ cents per pound, all in bags, car lot quantitites.

CAUSTIC SODA.—There were practically no changes in the caustic soda market. The contract movement is gradually expanding. Prices are holding to schedule. Solid caustic soda is quoted at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is in a sound position. The contract movement is well up to average. Prices are holding to schedule, in most instances. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Trading in the chlorine market was fairly active during the past week. Contract shipments are going forward to the mills in heavy volume. No further price changes have been reported. Chlorine is quoted at $2.50 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Some improvement was noticed in the rosin market. Prices were firmer. The grades of gum rosin used in the paper mills are quoted at from $8.15 to $8.65 per 280 pounds, in barrels, on dock. Wood rosin is selling at from 6:50 to $7.65 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market is still exhibiting a strong undertone. Offerings are decidedly scarce. Prices continue steady to firm with little prospects of concessions. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Supplies of soda ash are moving into consumption in satisfactory volume for the season. Production is being maintained in sufficient volume to take care of current needs. Prices remain unchanged. Contract quotations, in car lots, at works, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Most of the business transacted in the starch market was along routine lines. Shipments against contract are going forward in a normal manner. Prices are holding to schedule. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $4.09 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The position of the sulphate of alumina market is practically unchanged. Contract shipments are moving at a steady pace. Prices are holding to schedule. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Paper mill demand for sulphur is satisfactory for the season. Prices are steady. Sulphur is quoted at $18 per ton, at mine, for 1,000 tons ,or over, on yearly contracts, and at $20 per ton for any smaller quantity over the same period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The talc market pursues the even tenor of its way. Shipments against contract are going forward in good volume. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper
(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.00	@ 6.50
No. 2 Domestic	3.87½	@ 5.00
Southern	3.75	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	45.00	@47.50
85 Test Jute Liner	50.00	@55.00
Sgl. Mla. Ll. Chip	47.50	@50.00

Mechanical Pulp
(On Dock)

No. 1 Imported—		
Moist	30.00	@32.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00
Screenings	15.00	@20.00

Chemical Pulp
(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.30	@ 4.25
Easy Bleaching	2.85	@ 3.05
No. 1 strong unbleached	2.65	@ 2.75
Mitscherlich unbleached	2.70	@ 3.00
No. 2 strong unbleached	2.40	@ 2.60
No. 1 Kraft	2.35	@ 2.50
No. 2 Kraft	2.30	@ 2.40
Sulphate—		
Bleached	3.40	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20	@ 4.75
Easy Bleaching Sulphite	2.65	@ 3.00
News Sulphite	2.50	@ 2.70
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.10	@ 3.30
Soda Bleached	3.10	@ 3.25
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags
New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	9.50	@10.50
New White, No. 2	7.50	@ 8.00
Silesias No. 1	7.50	@ 8.00
New Unbleached	10.50	@11.00
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Blue Overall	7.25	@ 7.75
Washables	4.75	@ 5.25
Fancy	5.50	@ 6.00
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.00

Foreign Rags
New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.00	@10.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	2.00	@ 2.10
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.95	@ 2.10
Dutch Blue Cottons	2.20	@ 2.35
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.50
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.85	@ 1.90
Dark Cottons	1.50	@ 1.55
Old Shopperies	1.45	@ 1.50
New Shopperies	1.40	@ 1.45
French Blues	2.10	@ 2.25

Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.50	@ 1.60
Domestic	1.60	@ 1.70
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.25	@ 4.40
Domestic	4.25	@ 4.50
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers
(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.00	@ 3.25
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.40	@ 2.55
White envelope cuttings	2.90	@ 3.10
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag.	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.00	@ 1.10
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.45	@ .55
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.50	@ 1.75
Extra No. 1 old	1.25	@ 1.35
Print	.60	@ .65
Container	.40	@ .50
Bogus Wrapper	.60	@ .65
Old Kraft Machine Compressed bales	1.65	@ 1.75
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.55	@ .65
Strictly Folded	.45	@ .55
No. 1 Mixed Paper	.25	@ .30
Common Paper	.15	@ .20

Two Birds With One Stone

Lacing, Mechanically Correct: Each hammer-clinched steel tooth of Alligator Steel Belt Lacing holds its width of belt in a powerful compression grip like a tiny vise.

ALLIGATOR
STEEL BELT LACING

THE great surplus of strength of this smooth hinged joint gives length and reliability of service, unexcelled, in any type of belt and practically any service.

The sectional steel hinge pin (patented) absorbs friction in the joint.

Belt End Protection *Thrown In* Sealing the belt end with the powerful compression grip prevents internal friction and ply separation at the joint. Alligator Steel Belt Lacing prevents belt end troubles and *increases the life of belting.*

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Eleven sizes. Sold throughout the world

FLEXIBLE STEEL LACING CO.
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In England at 135 Finsbury Pavement, London E. C. 2

Note the Alligator Stamped on the Lacing and the Yellow Labeled Box for Your Guidance in Buying

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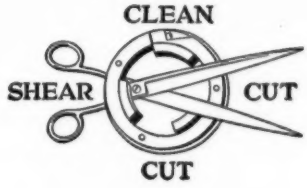

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AMERICAN MADE FOR AMERICAN TRADE

500 Tons Daily

TWO LEADING AMERICAN CLAYS

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FOR COATING & FILLING AND KIONDYKE BRAND FILLER

EDGAR CLAYS ARE THE RESULT OF ALMOST A HALF CENTURY OF EXPERIENCE IN WASHING CLAYS.

TECHNICAL SERVICE AVAILABLE BOTH FOR COATING AND LOADING WITHOUT CHARGE.

Send for Samples

EDGAR BROS. CO.
50 Church St. Hudson Terminal Bdg.
New York City

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¾
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet (Delivered Central Territory)	.07¼	@	.07½
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White.	2.35	@	2.40
White Env. Cuttings	2.60	@	2.65
No. 1 Soft Shavings.	2.10	@	2.15
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.65	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.60	@	.70
Folded News (overissue	.60	@	.65
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.40	@	.50
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.05	@	.06
No. 1 Kraft	.06	@	.06½
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	40.00
Chip Board	35.00	@	47.50
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft.	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White.	2.80	@	2.90
No. 2 Soft White.	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.30	@	1.40
No. 1 Books, heavy	1.25	@	1.35
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.40	@	.50
Container Manila	.25	@	.35
Old Kraft	1.60	@	1.70
Common paper	.15	@	.20
No. 1 Mixed Paper	.15	@	.20
Straw Board, Chip	.40	@	.50
Binders Board, Chip	.35	@	.45
Overissue News	.60	@	.70
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.01½	@	.01¾
No. 2	1.20	@	1.25
No. 3 (Roofing)	1.10	@	1.20
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009	52.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White.	2.60	@	2.90
No. 1 Soft White.	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy.	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.60	@	1.70
Old Kraft	1.55	@	1.65
Print Manila	.80	@	.90
No. 1 Mixed Paper	.30	@	.35
Overissue News	.45	@	.55
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.55
Manila Rope—			
Foreign	—	@	4.40
Domestic	—	@	4.50
Transmission Rope	—	@	2.75
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.55	@	1.75
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting.	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1.	.08½	@	—
Silesia, No. 1	.09	@	.09¼
New Unbleached	.09¾	@	—
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	1.50
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.75	@	5.00
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.85	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00		—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¾	@	.10
Fancy Shirt Cuttings	.06	@	.06½

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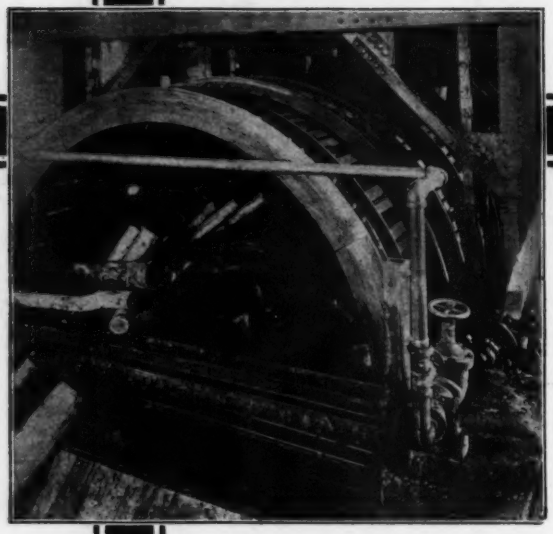
If U-BAR Drums Were Actually as Big as Their CAPACITY and STRENGTH



U-BAR Barking Drum GUARANTEE

In addition to the usual guarantee of workmanship and materials, we guarantee U-BAR Drums for two years at a minimum speed of 7½ R.P.M. (10′ diam.) running half-full of wood at an average of 3,000 working hours per year.

Yes, if the U-BAR Drums were actually as big as their great capacity and rugged strength indicate, they would be many times bigger than they are now. And capacity and strength are the most important considerations in buying barking drums.

Take capacity: It is the product of Interior Surface x Volume x Speed. Now consider these three factors as they are provided for in the U-BAR Drum:

1. *Interior Surface:* No one ever questions any more that the U-Bar interior barks more quickly and thoroughly than the smooth interior. An European barking drum manufacturer for instance, recently ordered *Seventy Tons* of U-BARS—enough for nine drums. Isn't that significant! One mill, using smooth interior drums, had to resort to baffles to overcome slipping of wood.

2. *Volume:* The U-BAR Drum is dammed up at both ends and is kept half-full of wood. The 10′x30′ drum, for instance, carries about five cords of wood. Of course you've seen open-end drums with a few logs tumbling in the bottom. Such operation may hold down maintenance in such drums, but it is not the way to get good wood or big capacity.

3. *Speed:* A vitally important factor. And the U-BAR Drum (10′ diam.) runs at a minimum speed of 7½ R.P.M. Many mills go as high as 10 R.P.M. to increase capacity. That's SPEED!—made possible by U-BAR flexible Chain Suspension and rigid drum shell.

So, when you buy barking drums, make sure of these three points. Examine the guarantee.

In the question of maintenance, the U-BAR installations speak for themselves. These cases are typical: The E-Z Opening Bag Company writes Feb. 14, 1928, "Please send us 20 feet of chain. This is the first and only repair on our drum which has been in operation since early 1924. We are more than pleased." Four years of uninterrupted service! *They bark dry.* And another Canadian Mill matches this report: "A $50 maintenance cost in 4 years with an average capacity of 16½ cords per hour." Think of it!

And all the experience and study of our 15 years building over 300 drums has proved that the *multiple-rivet* joint is the *permanent* joint. We tried welding years ago—we tried bolts too. That is why we use the *multiple-rivet.*

In U. S., Canada and Newfoundland there are over *twice as many* U-BAR Drums *as all other drums combined.* Why? Because when you specify U-BAR Drums you do not experiment—you KNOW what your results will be long before the Drums are installed.

Sales of U-BAR Barking Drums—1929

*Kenora Paper Mills, Ltd., Kenora, Ont.	1—10′x30′
Hennepin Paper Co., Little Falls, Minn.	1—10′x22½′
Backus Brooks Co., West Fort William, Ont.	1—10′x30′
James MacLaren Co., Ltd., Buckingham, Que.	1—10′x40′
James MacLaren Co., Ltd., Buckingham, Que.	2—10′x30′
Greenville Insulating Board Co., Greenville, Miss.	1—12′x45′
Meacham Lumber Co., St. Regis Falls, N. Y.	1—10′x30′
Lojo Sulphate Mill, Lojo, Finland	1—10′x30′
*Papeteries J. B. Weibel, Besancon, France	1— 6′x15′
Papeteries De La Chapelle, France	1—10′x45′
Ontario Paper Co., Ltd., Thorold, Ont.	1—10′x30′
*Cushnoc Paper Corp., Augusta, Maine	1—10′x30′

* Repeat orders.

Ask the Mills That Use Them

BARKING U-BAR DRUMS

Fibre Making Processes, Inc., Chicago, U. S. A.

CANADIAN BARKING DRUM CO., LTD., MONTREAL

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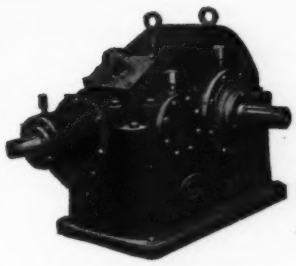
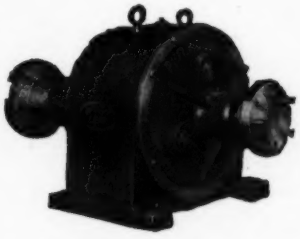
SPEED REDUCING UNITS
(ONE NAME-ALL TYPES)

"There's one make of Speed Reducers that can meet ALL Paper Mill Drives"

Regardless of the drive condition, there's a Philadelphia Speed Reducer to meet it, for they are made in ALL TYPES AND DRIVES. These units are bound to give satisfaction wherever installed because they are Engineered Products, resulting from 50 years' gear making experience. This long experience has taught us just what materials give the best service and "stand the gaff" with the least wear. Philadelphia Units are cool and quiet running, transmitting the maximum of driven power. They have been rightly called "the units of no repair parts."



Combination Spiral Bevel Herringbone Reducer



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Slitters	Rotary Driers
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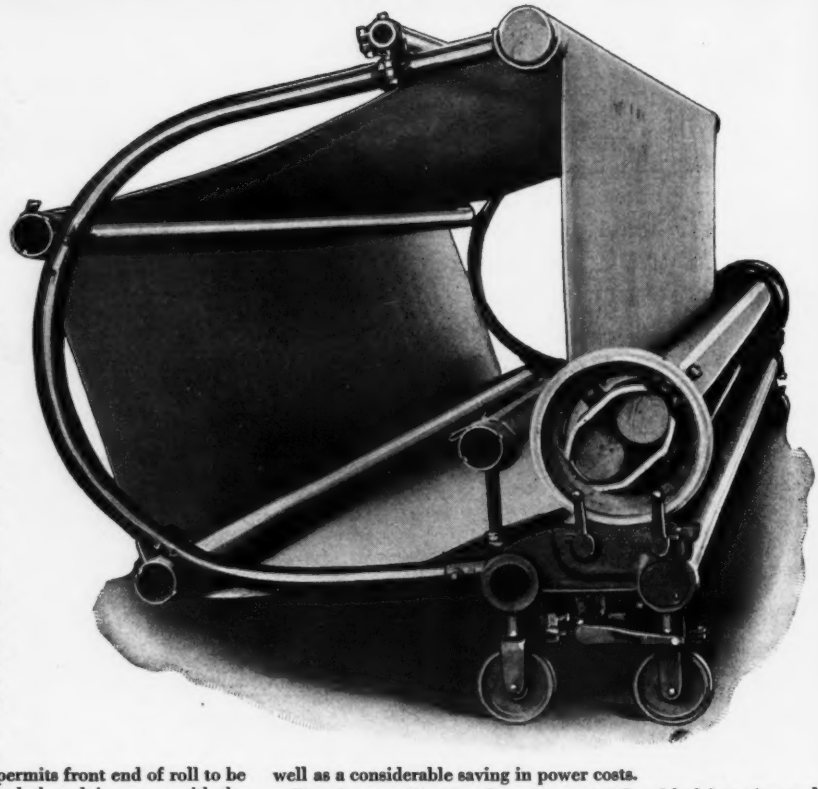
Now—Any Old Machine Can Use this MODERN System

HERE is good news for paper-makers using old style non-removable Fourdriniers. For quicker and easier wire changing, you can now have the Beloit (patented) Cantilever Suction Couch Roll and the Beloit (patented) Wire Carriage installed on any type of non-removable Fourdrinier.

This will enable you to make big savings in time when changing wires, and you will then be ready for the *Removable Fourdrinier*, which every paper-maker will eventually have.



THE combination of the Beloit patented cantilever suction couch roll and the Beloit patented wire carriage makes it possible, even on non-removable or stationary type Fourdriniers, to get some of the time, labor and money-saving benefits for which the Removable Fourdrinier is now famous.

Note the patented Beloit wire carriage illustrated. The wire is carried on this carriage, always ready for instant use, just like the spare tire on your car. It is always draped in proper position; all that is necessary is to roll the carriage up to the Fourdrinier, and transfer the wire from the carriage to the Fourdrinier by a few simple, rapid operations. The wire is not handled or touched by the men.

The cantilever suction couch roll permits front end of roll to be suspended, when wire is being changed, thus doing away with the perilous use of "cigarette holder" or overhead crane. The danger of wrinkling or kinking the wire is eliminated. As all suction rolls are equipped with roller bearings, smoother operation is assured as well as a considerable saving in power costs.

Here is a combination that saves considerable labor, time and money, and protects the expensive wire from the usual handling hazards. It simplifies the wire changing operation, and, in most mills, soon pays for itself in the savings it effects.

Write for details as to how this better system can be applied to modernize your mill.

The *Beloit* Way is the *Modern* Way

BELOIT IRON WORKS, BELOIT, WISCONSIN, U. S. A.

The BELOIT

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THE

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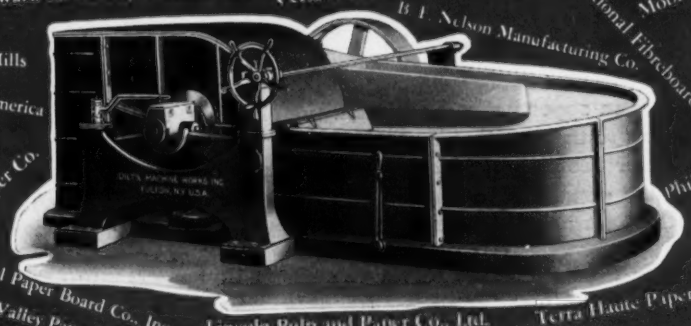

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Bearium metal offers an opportunity for economy in bearing upkeep not approached by either babbitt or bronze owing to the fact that Bearium is so processed as to give a coefficient of friction below that of the better babbits combined with the strength obtainable from the better bronzes. This results in Bearium giving more than double ordinary bearing life as well as absolute insurance against scored or otherwise injured shafts.

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Bearium is frequently used as the bearing metal in hot applications without resorting to water cooling—this being possible owing to the unusually low coefficient of friction of Bearium at high temperatures.

Longer Life: Reduces final bearing cost 50%.

Anti-frictional Quality: Lower power consumption plus longer wear.

Greater Strength: Resulting in longer life.

Non-Seizing — Non-Scoring: With or without lubrication.

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Bearium is available in all forms suitable for bearing requirements—the most popular form being our cored and solid bars 12″ long and in a large variety of diameters. A large stock of these bars are on hand at our Rochester works as well as at mill supply houses throughout the country, assuring prompt service on all requirements.

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Reg. U. S. Pat. Off.

When the G.T.M. comes in . .

watch the COSTS go down

The G.T.M.—Goodyear Technical Man—has a practiced eye for costs. He is expert in the application of Mechanical Rubber Goods to industry. With lowered costs always clearly his object, he sits in on all jobs. Whether your problem is effective transmission of power, goods, air, or liquid, he knows a way to get the job done easily, swiftly, and at lowest cost. He has many times counseled industries similar to yours, smoothed their way. He can do for you, *positively and expertly*, what he has done for others.

Your job is paper. The G.T.M. is an expert in your field. He has applied Goodyear Transmission Belting with remarkable success on beater drives. He has specified soft-nozzled Goodyear Water Hose, Goodyear Air, Steam, and Fire Hose to the needs of countless paper manufacturers. The G.T.M. knows paper mills and their problems. He is your man, ready for your job.

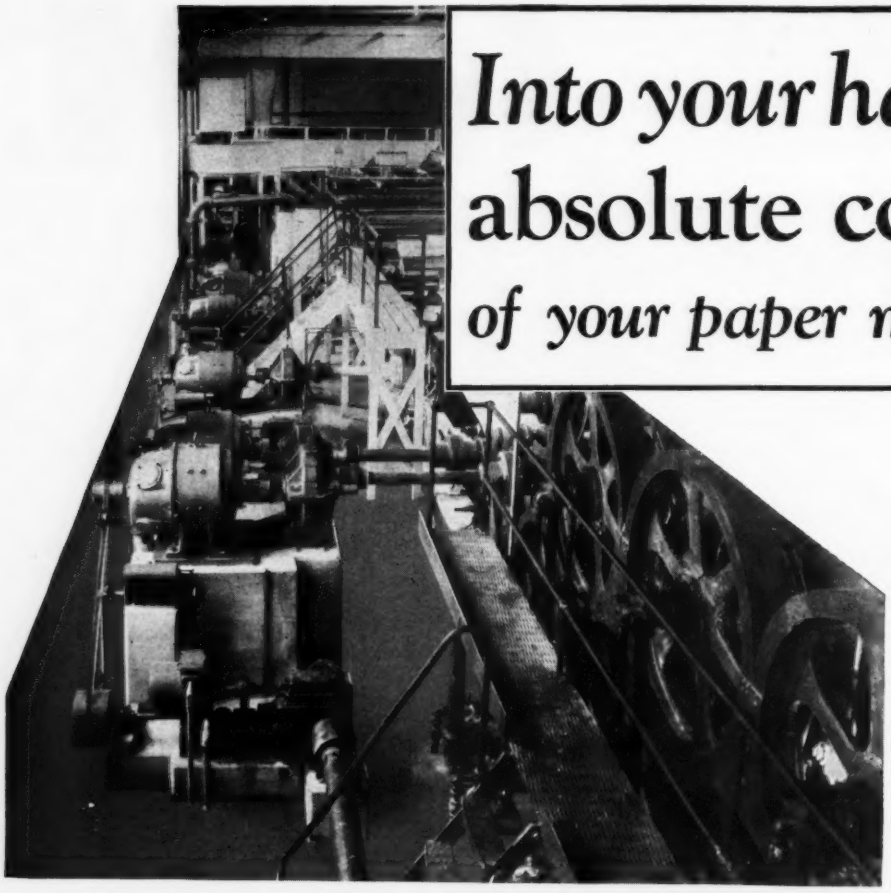
For full information on savings the G.T.M. can bring to your business, write to Goodyear, Akron, Ohio, or Los Angeles, California.

THE GREATEST NAME IN RUBBER

GOODYEAR

HOSE BELTING MOLDED GOODS PACKING

Into your hands.. absolute control of your paper machines



Lookingtowardwet end of machine. Cutler-Hammer Paper Machine Drive in plant of Mead Pulp & Paper Company, Chillicothe, Ohio.

UNIQUE, in the degree of control it gives the paper maker, the Cutler-Hammer (Harland) Drive for paper machines stands alone.

This extra degree of control is the reason why world's tonnage records have been made and remade by machines equipped with C-H (Harland) Drive . . . why speed changes are made with far fewer breaks . . . why the amount of salable paper from each jobbing run is increased. In addition, the C-H (Harland) Drive is so simple in design and operation that the "cut and try" period is almost eliminated. Tons of salable paper usually are produced the first day stock is put on the wire.

Any mill, seeking to keep abreast of present-day competition, to keep up with present-day speed, will do well to investigate the C-H Drive thoroughly. It presents many advantages, all described fully in the new booklet *"Keeping Paper on the Reel."* A copy will be sent at your request.

Write today for this interesting booklet "Keeping Paper on the Reel."

CUTLER-HAMMER, Inc.

Pioneer Manufacturers of Electric Control Apparatus

1274 St. Paul Avenue MILWAUKEE, WISCONSIN

CUTLER HAMMER

Harland Electrically Interlocked Paper Machine Drive

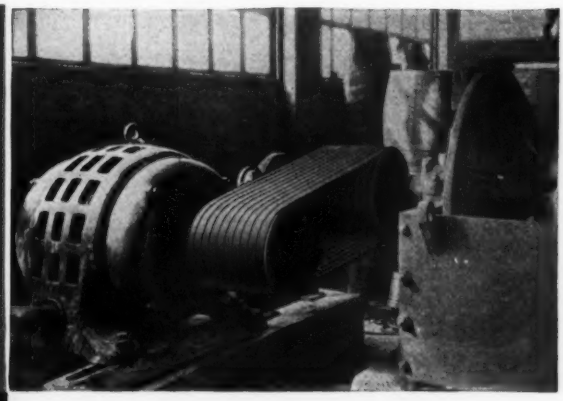
(A-251)

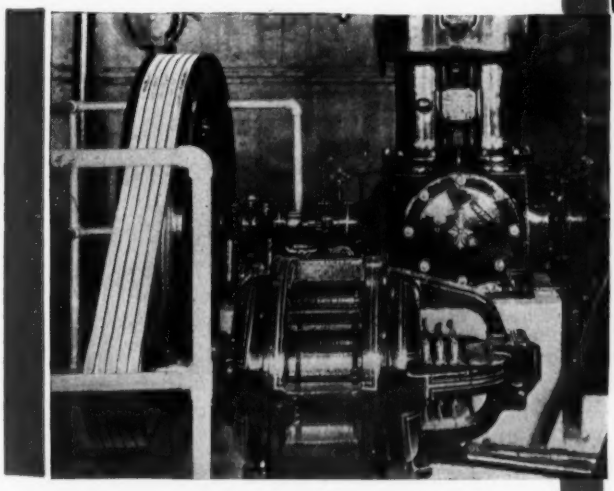
NOW... *a better product faster production, at less cost, by installing...* DAYTON COG-BELT DRIVES

GET *more production* and a *better product* . . . both at *lower cost!* These vital and revolutionary results are possible from *your* machinery through Dayton Cog-Belt Drives. The reasons are simple.

Positive Speed, No Vibration

Dayton Cog-Belt Drives give your machines positive speed, exact speed ratios and exact speed control . . . all due to the great gripping power of Dayton Cog-Belts in the pulley grooves. This keeps production flowing smoothly . . . at the speed your product requires. Irregularities in operation are eliminated. There is no vibration. They are smooth starting and running. For these reasons they enable you to increase production and manufacture a more uniform and better product.





Less Wear, Lower Costs

Dayton Cog-Belt Drives produce *less wear* on bearings because less tension is necessary. *Less space* is occupied because extremely short center-to-center distances are possible without idlers. Fewer belts are required and smaller pulleys. The belts are rugged—*have longer life* . . . require fewer replacements. They are clean . . . require no dressing . . . no oil or grease to collect dirt. Not affected by moisture. They do *a better* job at *lower* cost.

But get *all* the facts about Dayton Cog-Belt Drives. Send for a catalog and free sample section of the belt. Mail the coupon NOW.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio

Manufacturers of Dayton De Luxe Thorobred Balloon Tires and Dayton Fan Belts

Dayton
COG-BELT DRIVES

THE DAYTON RUBBER MFG. CO.,
Dept. No. V-12 Dayton, Ohio.

Gentlemen: Send me a free sample section of the Dayton Cog-Belt and a Dayton Cog-Belt catalog. I am interested in Dayton Cog-Belt Drives for

☐ Use in plant ☐ Use on product

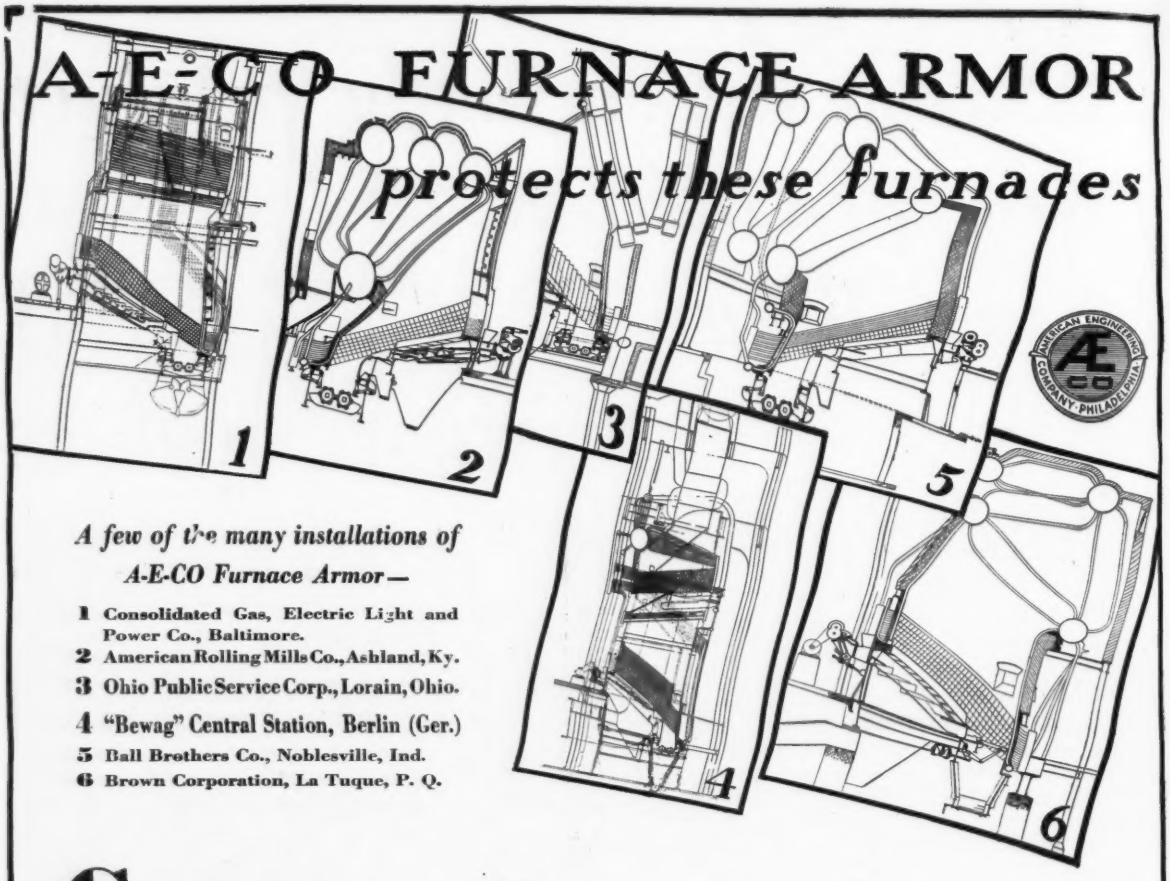
Name .....

Position .....

Firm Name .....
Firm Address .....

A-E-C O FURNACE ARMOR

protects these furnaces



A few of the many installations of A-E-CO Furnace Armor—

1 Consolidated Gas, Electric Light and Power Co., Baltimore.
2 American Rolling Mills Co., Ashland, Ky.
3 Ohio Public Service Corp., Lorain, Ohio.
4 "Bewag" Central Station, Berlin (Ger.)
5 Ball Brothers Co., Noblesville, Ind.
6 Brown Corporation, La Tuque, P. Q.

Consider These Savings . . .

Progressive central stations and industrial plants use A-E-CO Furnace Armor (water-cooled walls) because it saves money and enables them to get more out of their furnaces. With it you can . . .

Reduce Maintenance
Reduce Boiler Outage
Increase Efficiency
Increase Furnace Capacity
Burn Cheaper Coal

Designed and manufactured by the same engineering organization that builds the TAYLOR STOKER, it has been developed with the requirements of stokers in mind and combines with them to form a reliable, efficient, economical unit for burning coal as it comes from the mine.

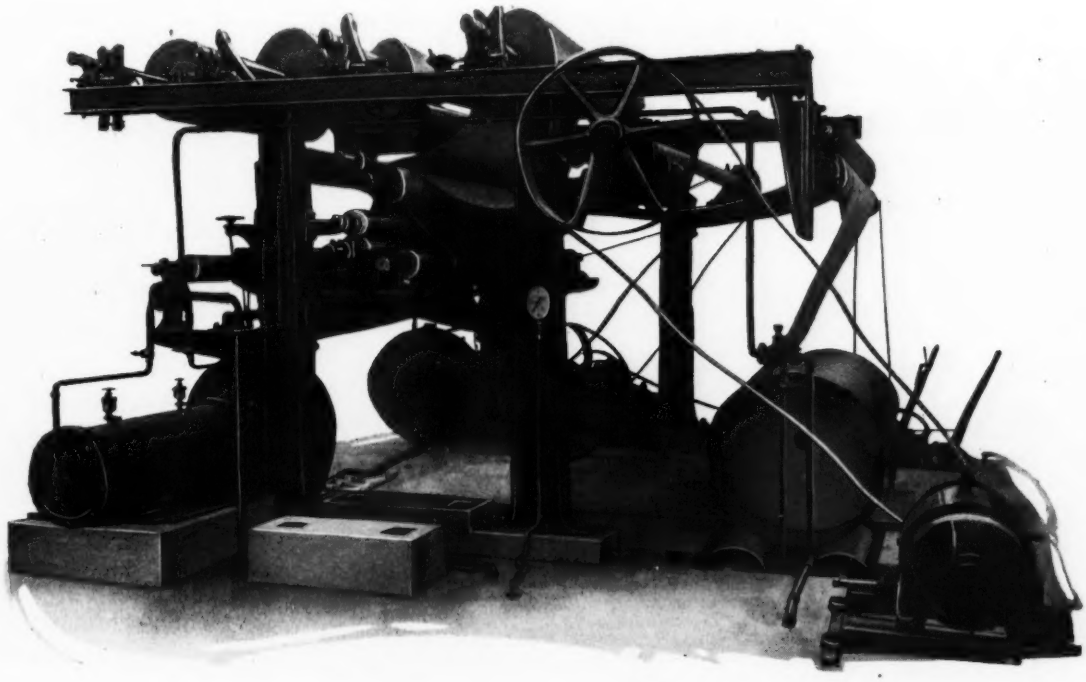
Only a few of the many installations in this country and abroad can be illustrated here. Write for complete information.

AMERICAN ENGINEERING

American Engineering Co., 2401 Aramingo Avenue, Philadelphia

In Canada: Affiliated Engineering Companies, Ltd., Southam Building, Montreal, Canada

A Voith product!



The Bywall-Qvarnstroem

Roll Wrapping Machine

Provides real protection for your rolls at low cost

American Voith Contact Company, Inc.

280 Madison Ave. New York

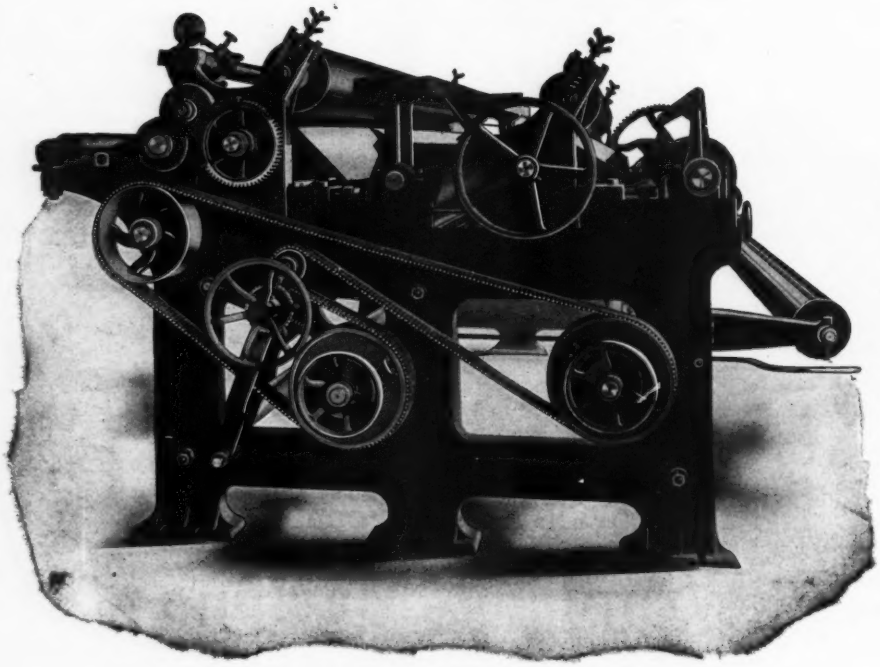
A SIGNIFICANT FACT!

HAMBLET ROTARY PAPER CUTTERS

ARE IN DAILY USE

IN MORE THAN FIVE HUNDRED MILLS

THERE'S A REASON!



HEAVY TYPE DUPLEX CUTTER

WE MAKE
Single and
Duplex Cutters

Automatic
Lay-Boys
For Single and
Duplex Cutters

ROLL STANDS
For Any Number
of Rolls

HAMBLET CUTTERS

INSURE AN EFFICIENT—ECONOMICAL SERVICE

Write for Full Information

HAMBLET MACHINE COMPANY

LAWRENCE, MASS.

MILL AGENTS

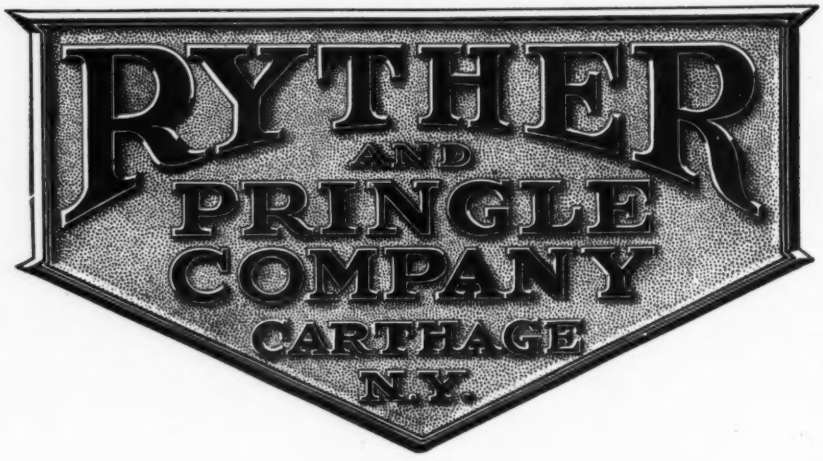
PULP

PERKINS-GOODWIN CO.

ESTABLISHED 1846

551--5th AVENUE, NEW YORK CITY

PAPER



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PREPARATION of WOOD

for

THE PAPER INDUSTRY

Ryther High Speed Screens
Wood's Ideal Chip Breaker
Conveyors & Elevators
Ryther Flat Screens
Ryther Log Hauls
Ryther Slashers

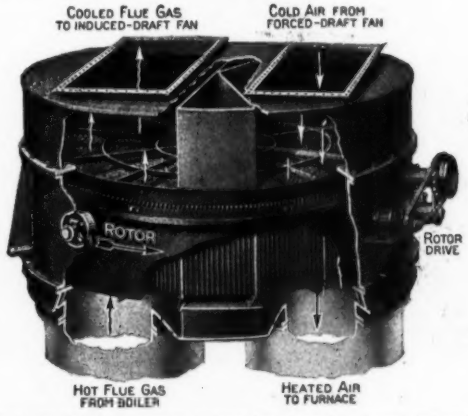
Ask for Bulletin and General Information

CANADIAN INGERSOLL-RAND COMPANY, LIMITED
10 PHILLIPS SQUARE, MONTREAL, P. Q.

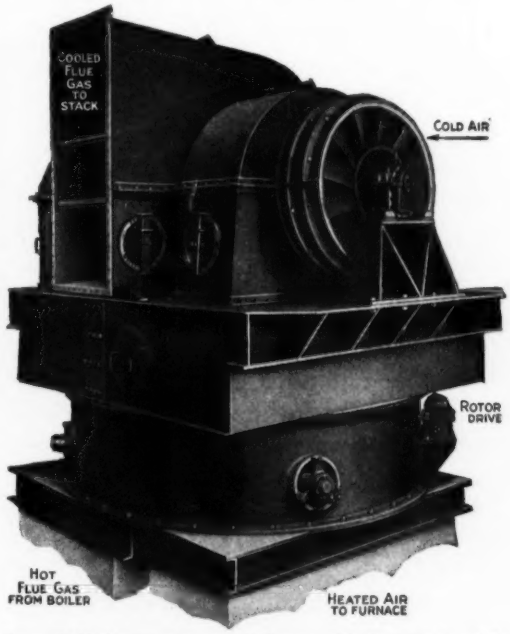
AIR PREHEATING

Can you afford to buy any but the LJUNGSTROM REGENERATIVE PREHEATER?

SOME of the problems you must face in trying to find as good a preheater as the Ljungström are indicated in the experience of a large power user (name on request) that recently looked the field over thoroughly—and then made a quick and wise decision in favor of two Ljungstöm units.



Type CANX for use with independent forced-draft and induced draft fans. Operated with rack-and-pinion drive, and has a center thrust bearing in the cold air side of the top housing. For boiler units of 1000 hp. and over.



Type CAN Ljungström Air Preheater with integral forced-draft and induced-draft fans. The scroll fan housings in connection with axial fan wheels greatly increase fan capacity and decrease the operating power requirement.

These Ljungström Preheaters are to serve two 1000-hp. boilers which are fitted with multiple-retort stokers, and which are expected to deliver the flue gas to the preheater at temperatures from 370 to 525 deg. fahr. over the operating range.

The Ljungström price was considerably lower than that of the lowest bidder on a recuperative preheater and *half* that of another bidder, yet—the Ljungström *guaranteed the greatest air temperature rise, the greatest gas temperature drop through the preheater, the lowest final exit temperature of flue gas, had greater free areas through both air and gas sides, and weighed only from one-third to one-sixth as much as the six recuperative outfits offered.* Think what the last named means in foundation and erection costs!

The position of the Ljungström Air Preheater in its field is consistently that of supremacy in the amount of waste heat recovery from apparatus of given weight, volume and cost, in dependable performance, in high fuel saving and boiler capacity increase, and in the maximum annual net cash return upon the whole investment in preheating equipment and its maintenance.

That is why the Ljungström is the only internationally used preheater, with installations scattered all over the globe.

The new Ljungström Air Preheaters are small enough to go into a cramped boiler room, are free from operating complications and yield such a high annual return, that they ought to be investigated for every plant with moderately high or very high load and use factors.

Get the Ljungström Air Preheater booklet and use it to study your own plant; then put your problem up to our Engineers for free advice. We will tell you frankly what a Ljungström Preheater should do, exactly what we would guarantee, and where the same guarantee is being well met under similar conditions.

Over 800,000 boiler hp.
in service in the U.S.A.

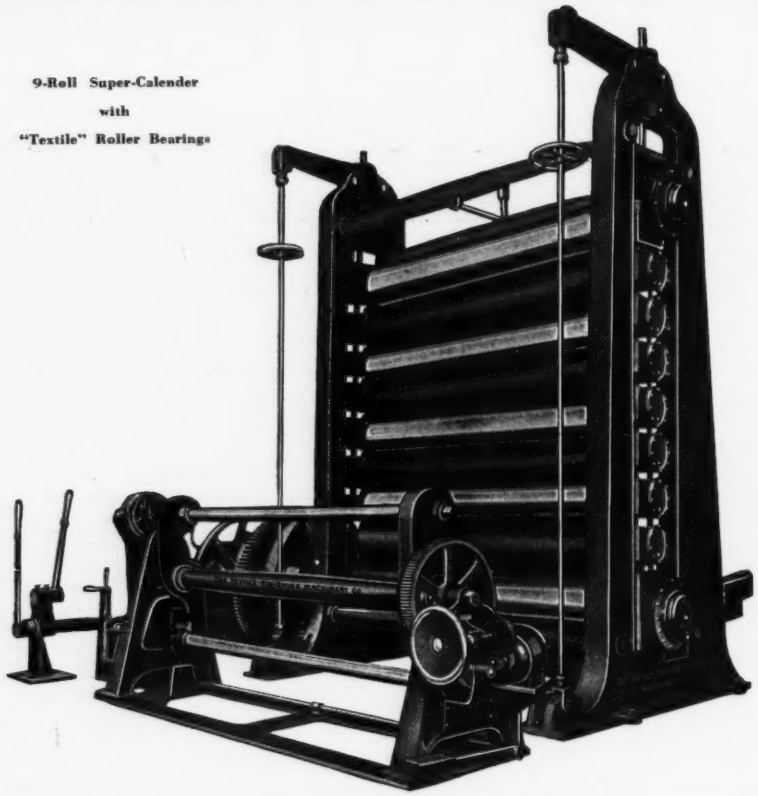
THE AIR PREHEATER CORPORATION
40 E. 34th St., New York

Works: Wellsville, New York, Agents in

Boston	Charlotte	Cleveland	St. Louis	Pittsburgh	Tacoma
Buffalo	Denver	Philadelphia	New Orleans	Cincinnati	Houston
Chicago	Detroit	Minneapolis	San Francisco	Kansas City	Los Angeles

Canada: Lammers & Maase, Ltd.
Montreal and Vancouver

Ljungström AIR PREHEATER
Reg. U.S. Pat. Off.
CONTINUOUS REGENERATIVE COUNTERFLOW



9-Roll Super-Calender
with
"Textile" Roller Bearings

A Modern Super Calender

THE latest type Textile Super Calender possesses important advantages of design and construction; interesting features are:—

Smoothness of operation at speeds up to 1000 feet per minute while running in range with Winder and Slitter.

Broad range of pressures possible while operating at high speeds.

Both top and bottom rolls run in "Textile" Roller Bearings, reducing power consumption to a minimum . . . eliminating overheated bearings . . . floor about machine is kept drier and cleaner.

"Textile" massive semi-open type side frames which permit the convenient removal of rolls sidewise.

Motor lifting attachments for quickly raising and separating the rolls when Calender is stopped.

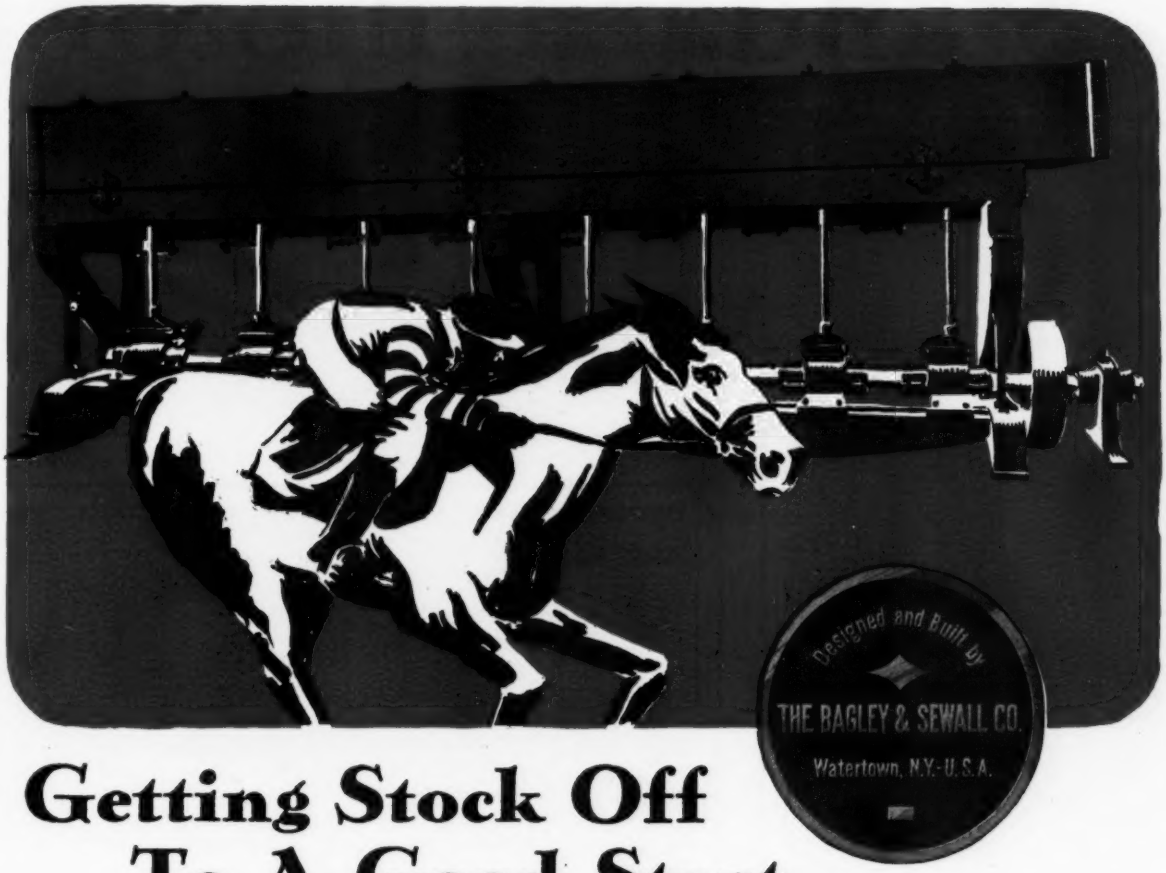
There are other desirable features about this Super-Calender that would be to your advantage to know about. May we suggest that you write today for illustrations and complete descriptive details.

THE TEXTILE-FINISHING MACHINERY CO.

HARRIS and SIMS AVES.
EMBOSSING CALENDERS

SUPER-CALENDERS
COTTON AND PAPER ROLLS

PROVIDENCE, R. I.
FRICTION CALENDERS



Getting Stock Off To A Good Start . . .

Stock leaves the Bagley & Sewall Inclined Screen with the snap of eager thoroughbreds flashing past the barrier and down the straightaway. No hesitation, no delay,—speedy and clean as modern paper making technique demands. *The original inclined screen,* its special construction keeps screen slots constantly clean and draws stock through positively. Unusual capacity permits the use of finer-than-usual plates, without plugging, overflow or slime formation. Dirt flows away unaided. Showers and their extra overhead may be eliminated. Economical as well as practical, saving labor, time, screen plates and power in ways that only an actual demonstration would make you appreciate.

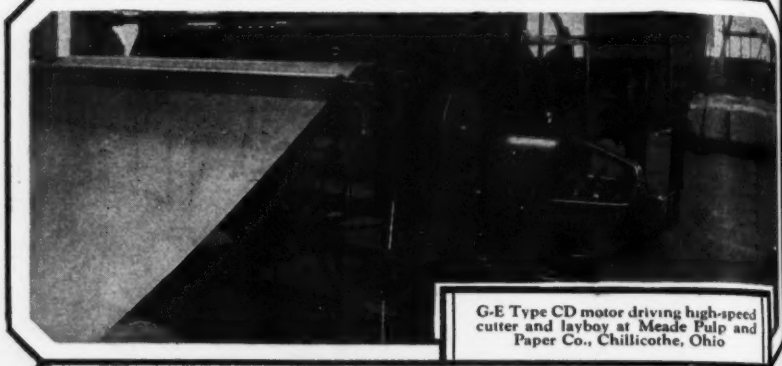
We'd like to tell you ALL about it — write us

The Bagley & Sewall Co.

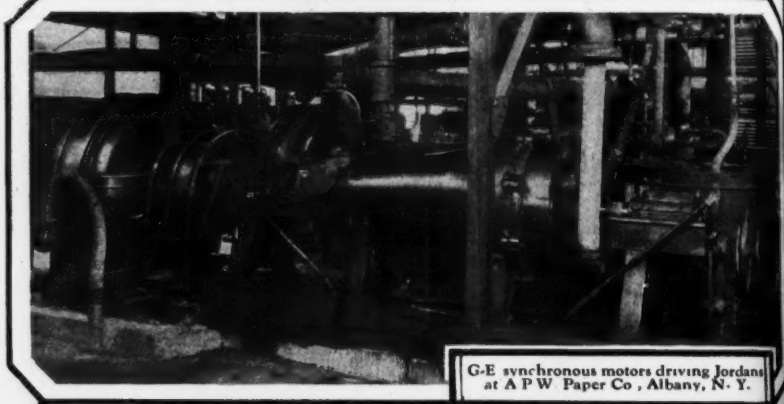
Watertown, N.Y.

Standard motors

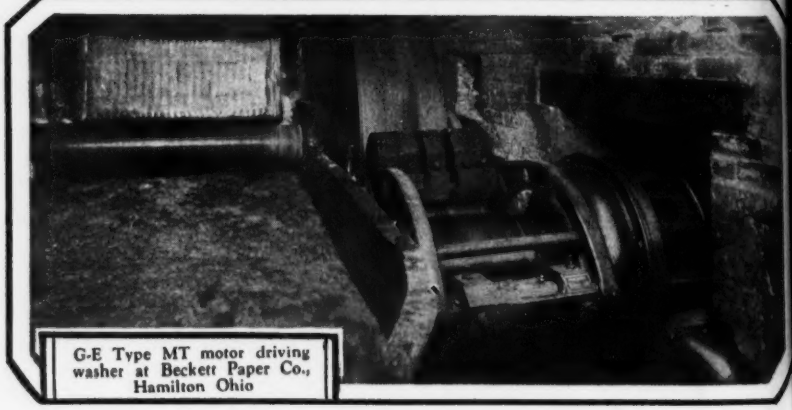
G-E Type KT motors driving tunnel dryers at Union Bag and Paper Power Corp., Tacoma, Wash



G-E Type CD motor driving high-speed cutter and layboy at Meade Pulp and Paper Co., Chillicothe, Ohio



G-E synchronous motors driving Jordans at A P W Paper Co , Albany, N. Y.



G-E Type MT motor driving washer at Beckett Paper Co., Hamilton Ohio

Apply the proper G-E motor and the correct G-E controller to a specific task, following the recommendations of G-E specialists in electric drive, and you have G-E Motorized Power. Built in or otherwise connected to all types of industrial machines, G-E Motorized Power provides lasting assurance of performance that builds confidence.

Motorized Power
—fitted to every need

GENERAL

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.

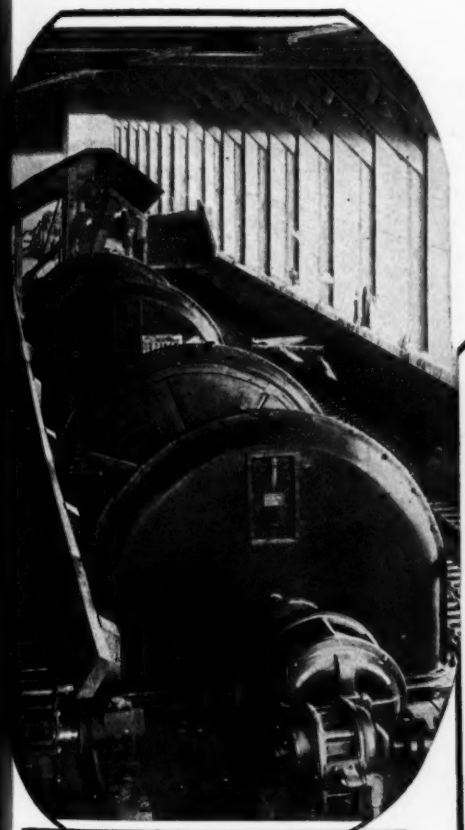
for special jobs

SPECIAL jobs do not necessarily require special motors—most of them can be handled efficiently and economically by standard G-E general-purpose motors.

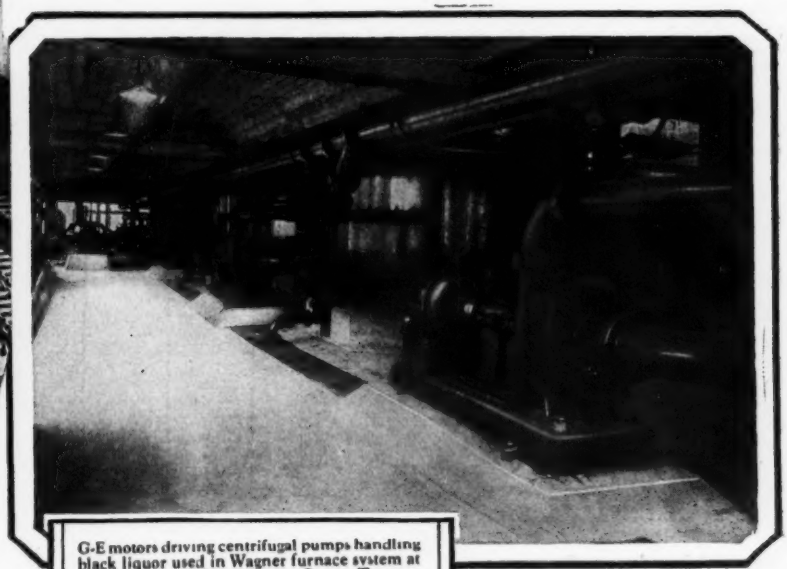
So extensive is the line of G-E general-purpose motors that they can be used for a large majority of the applications of any mill—driving Jordans, winders, barkers, cutters, dryers, conveyors, pumps, etc.

When special equipment is necessary, General Electric can furnish it

But farsighted operators use G-E general-purpose motors wherever possible, not only because their standard design makes a lower cost, but because, like other General Electric motors, they have the electrical and mechanical properties which give reliable, economical operation.



G-E Type KT motors driving barkers and conveyors at Spalding Pulp and Paper Co., Newberg, Ore.



G-E motors driving centrifugal pumps handling black liquor used in Wagner furnace system at Union Bag and Paper Power Corp., Tacoma, Wash.

200-282

ELECTRIC

SALES OFFICES IN PRINCIPAL CITIES

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Makers of the world's finest record papers

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FLEXO LEDGER IS USED WHERE A FLAT LYING LOOSE LEAF SHEET IS DESIRED

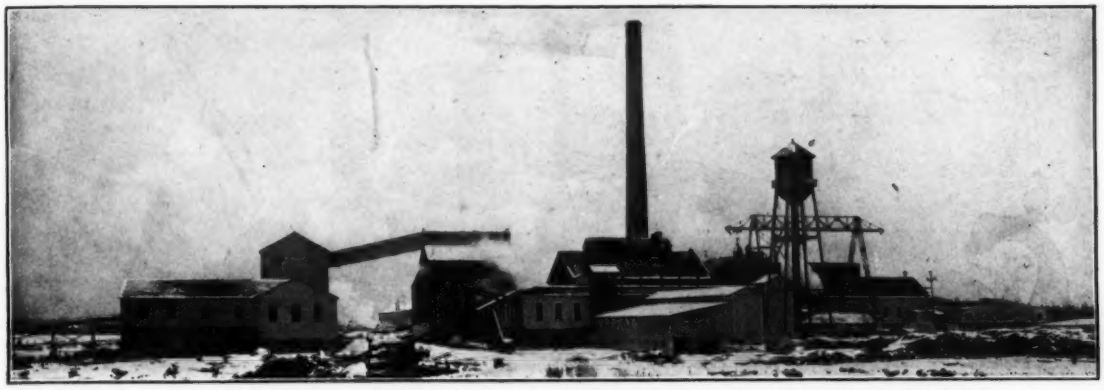
TYPOCOUNT LEDGER IS USED IN QUALITY FORMS FOR MACHINE POSTING PURPOSES

WESTON'S MACHINE POSTING IS USED WHERE ECONOMICAL SERVICE IS REQUIRED

DEFIANCE BOND IS USED WHERE A QUALITY BOND OF HIGHEST CHARACTER COUNTS

BW

Each of these Papers has a distinctive use and each one is guaranteed to give first class service



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TOMAHAWK - WISCONSIN

Manufacturers of Highest Grade

All Sulphate Wrappings

and Specialties

For Conversion Into

Gummed Tape
Bags
Waxings

Cement Sacks
Envelope
Tire Wraps

Sales Office:

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Chicago, Illinois

"Going Big"

Six Range Changes

You CAN have flow meters the ranges of which can be changed easily, quickly and cheaply.

CHANGING the range of a Brown Electric Flow Meter is an easy job. All that is required is to remove the range tube cover, unscrew the range tube, screw in another of the proper size, and use a suitable chart for the new range in your recorder.

No delay, little work, and very small expense. Six different ranges are available with one manometer.

"To Measure is to Economize"

Write for Catalog No. 21

Brown Electric

with Paper Mill men!

Flow Record on Chart Rim

You CAN have flow meters that will record *total* flow as well as *rate* of flow on the chart.

AN *extra* feature of all Brown circular chart recording flow meters is the Brown Automatic Planimeter.

By a simple mechanism the flow units are recorded on the chart rim.

Total flow as well as variations in rate of flow can be read directly from the chart for any period.

No dependence need be placed on periodic integrator readings.

The data is automatically placed on record.

Counter and Recording Planimeter for the Brown Electric Flow Meter

This simple element in the Brown Recording Flow Meter records on the chart every unit of flow registered on the integrator counter.

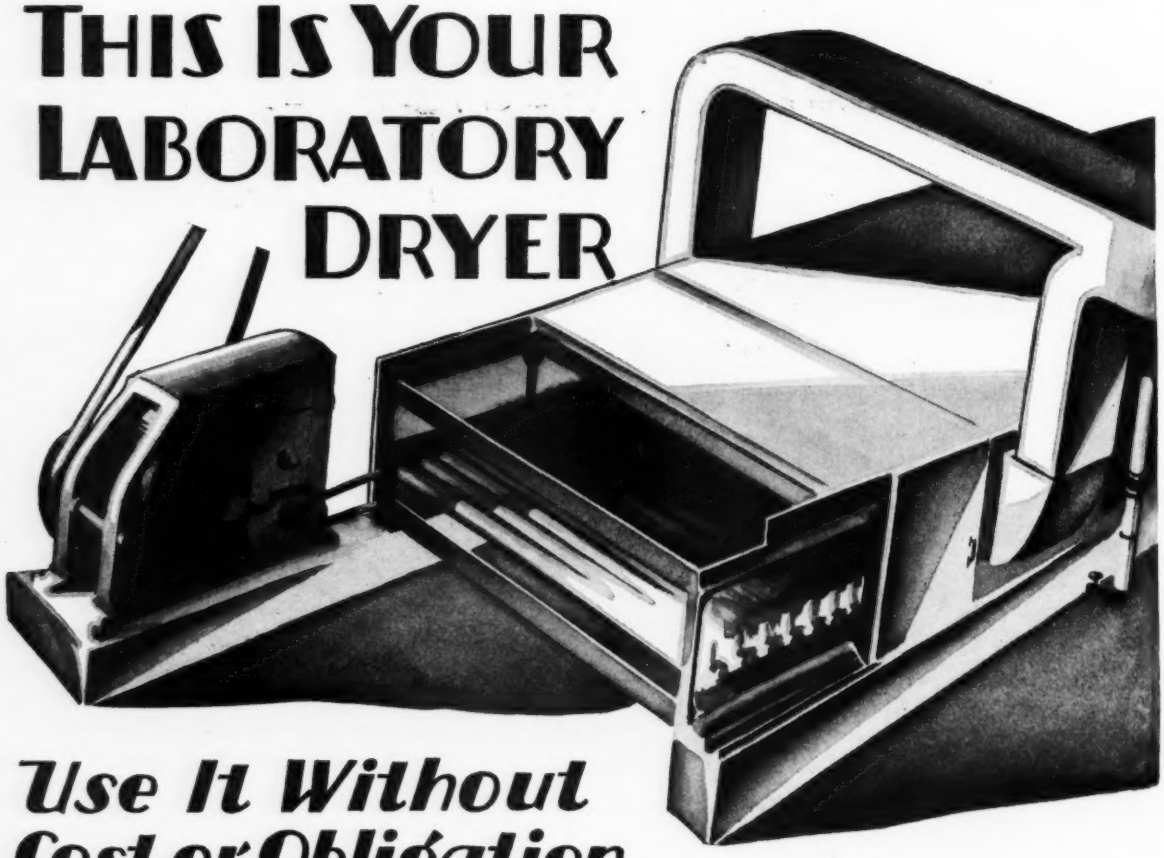
THE BROWN INSTRUMENT COMPANY
4510 Wayne Ave., Philadelphia, Pa.
Branches in 20 principal cities

Flow Meter

On the Inductance Bridge Principle

To All Intents And Purposes

THIS IS YOUR LABORATORY DRYER



Use It Without Cost or Obligation

IF you are a manufacturer having a fibrous by-product now going to waste, perhaps it can be turned into a practical building board. We'll put you in touch with board forming specialists and run your drying tests.

If now experimenting with a board, let us solve the difficult problem of drying.

If you are now manufacturing boards why not let us determine whether there is a possibility of lowering drying costs and speeding production.

This Laboratory Dryer and the assistance of Coe Engineers is available for any of these services. The Coe Board Dryer Catalog explains this unusual co-operation in connection with a most efficient machine. Write for it.

The
COE MFG. CO.
PAINESVILLE·O.
432 Bank St.

BOARD COE DRYERS

Fitchburg Paper Company

Founded 1861

MANUFACTURERS OF

Fitchburg Finish

PRINTING PAPERS

ESPECIALLY DEVELOPED

for

ROTARY-WEB-FLATBED and ROTOGRAVURE

also

SPECIAL PAPERS

for

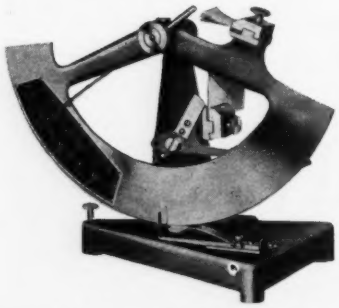
COATING - GUMMING - LITHOGRAPHING

and WALL PAPERS

Capacity — 120 Tons Per Day

Fitchburg = = Massachusetts

THWING
PAPER TESTING INSTRUMENTS



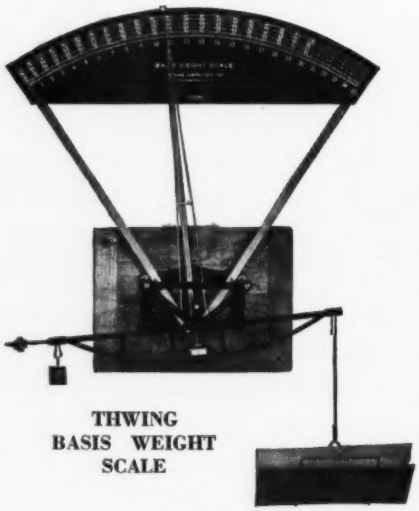
ELMENDORF PAPER TEARING TESTER

The Elmendorf Tester is the modern test to determine the strength of paper, gummed tape, fabric and like products. This tester eliminates the old improvised finger tear test. The Elmendorf Test gives the tearing strength directly in force grams and from the results of these tests definite tearing strength standards are established.

The Tester works entirely by gravity. Each instrument is carefully tested and guaranteed for accuracy.

The Elmendorf Test is now the standardized test adopted by a number of the paper trade associations.

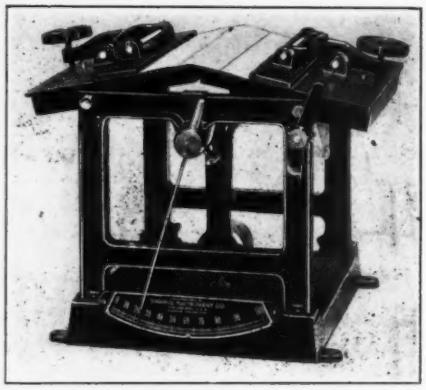
Write for Bulletin 17.



THWING BASIS WEIGHT SCALE

The Thwing Basis Weight Scale meets the most exacting requirements of buyers and sellers of paper for an accurate quick acting, quick reading and dependable basis weight scale. Using a single sheet of paper the scale instantly reads directly the weight in pounds per ream. Each scale accurate to one-tenth pound per ream. These scales are furnished to cover a great variety of weights. Special scales are supplied to read: sheets per bundle, pounds per thousand square feet, etc.

These Basis Weight Scales are perfectly adapted to moisture content determinations and are more accurate than the usual type of scale for this purpose. No change in calibration necessary when used for this purpose. Write for Bulletin 19.



McLAURIN GUMMED TAPE TESTER

The McLaurin Gummed Tape Testers determine the critical strength of glue after being applied to paper or cloth tape by measuring the amount of resistance to a constant pull which the moistened glue exerts just prior to a complete set. Resistance values as shown by the McLaurin Tester indicate in a convincing manner the superiority of high grade glues. Write for Booklet F-89.

PENESCOPE PENETRATION TESTER

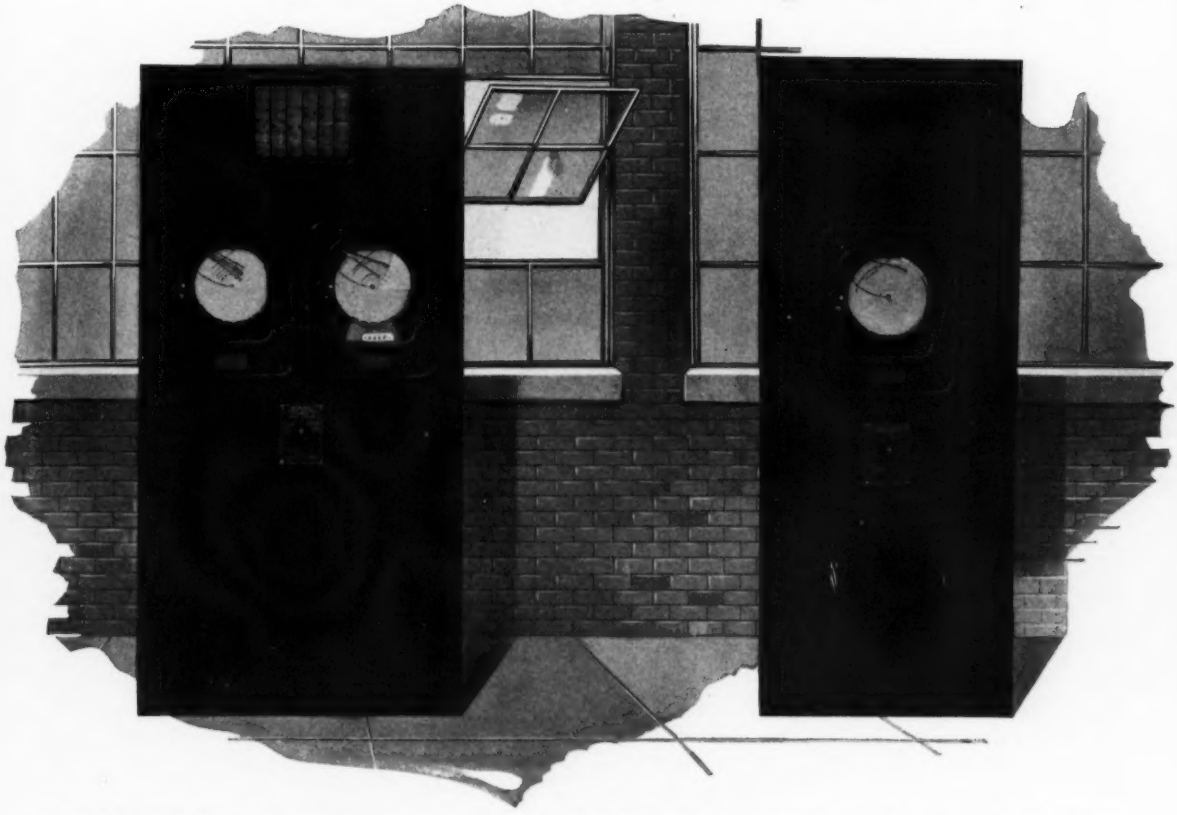
The Penescope is a simplified convenient instrument for holdng samples of paper, fabrics, leathers and various other materials, so that they may be observed and tested for permeability to liquids. This includes tests for complete water penetration, partial water penetration, evaporation losses, sizing, grease proofing etc. The Penescope is an unusually compact tester which should be in every testing laboratory. Write for Bulletin 18.

THWING INSTRUMENT COMPANY

247 **3341 Lancaster Avenue, Philadelphia, U. S. A.**

Automatic Control

For Another Pulp Mill



Individual Boiler and Master Control Panels of Bailey Combustion Control at Jno. H. Heald Co.

Modern pulp and paper mills reduce production costs by careful steam engineering. Steam generation and distribution are important factors in determining whether profits will appear in red or in black.

At Lynchburg, Va. steam costs in the plant of Jno. H. Heald Co. are kept at a minimum by the use of Bailey Automatic Combustion Control, Bailey Boiler Meters, Temperature Recorders, Multi-Pointer Gages and Centralized Bailey steam and water distribution meters. Steam pressure is maintained at the desired point and fuel and air are automatically proportioned by the automatic control so as to secure the highest combustion efficiency consistent with economical operation.

Satisfactory operation of Bailey Meters and Control at Lynchburg has resulted in the Management Engineering and Development Co. of Dayton, Ohio, Engineers for Jno. H. Heald Co. ordering a similar group of Bailey Meters and Control for the new power plant of the Mead Straw Pulp Co., Chillicothe, O.

Progressive pulp and paper mills are securing low steam costs which leave ample room for profit by the use of Bailey Metering Control and Regulating Equipment.

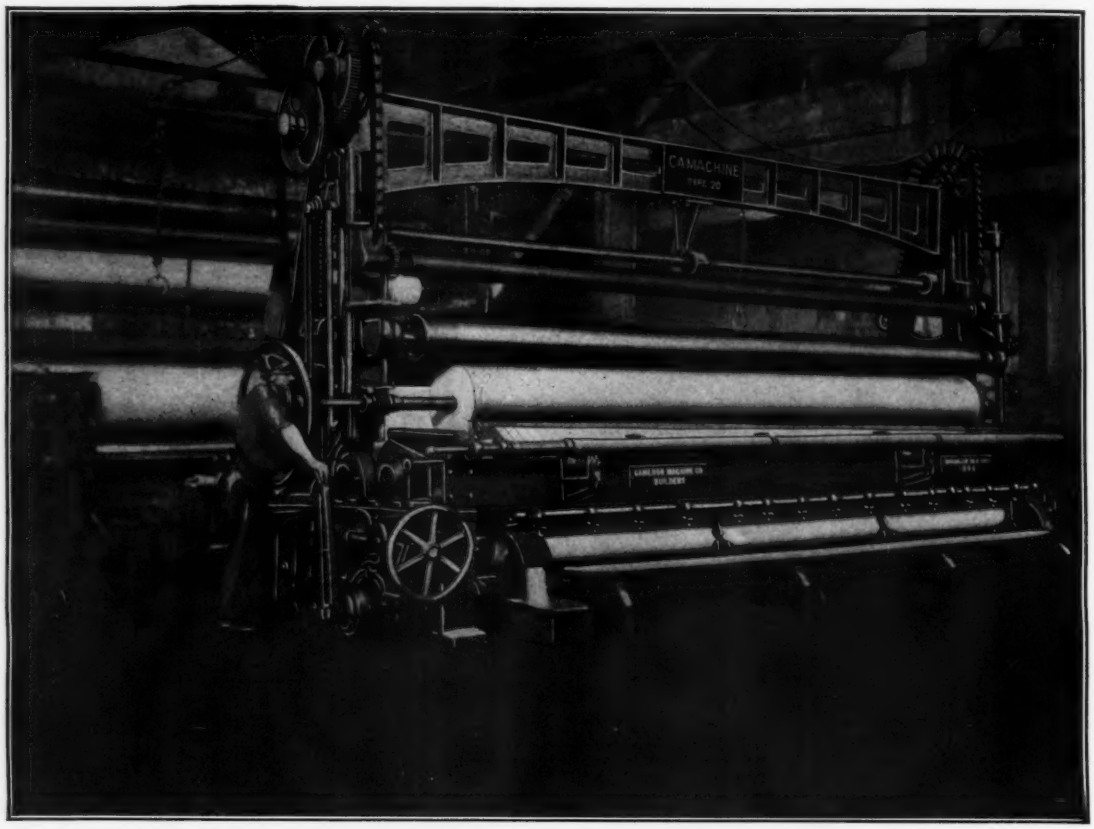
Write for Bulletin No. 181. It describes Bailey Control.

BAILEY METER CO.

1056 IVANHOE RD. CLEVELAND, OHIO.

Bailey Meter Company Limited, Montreal, Quebec.

HIGH SPEED WINDERS



• • • • *sold on merit*

Merit-demonstration is the basis of all sales of Camachine Slitters and Roll-Winders.

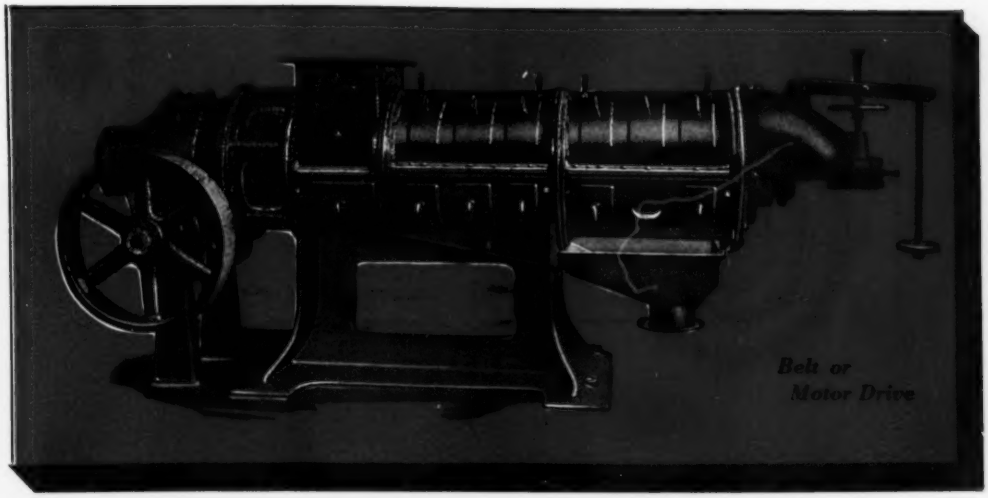
As designers, patentees and sole manufacturers of machines using the Camachine principle of slitting and roll-winding, the company is definitely sure of the superior service qualities of any machine it recommends for a specified purpose, and it is ready to install the machine in the prospective purchaser's plant, anywhere in the United States or Canada, subject to his right to retain or return it after operating the machine during thirty days following its installation.

This merit-demonstration safeguards the customer by enabling him to assure himself definitely of the service he can depend on before committing himself to an actual purchase of the machine.

Merit-demonstration also permits the mill staff to satisfy themselves in a practical and risk-free way that Cameron built winders are good roll-winders and that they are preferable to others by reason of better roll production with more economical operation before they recommend or agree to the acceptance of the machine. We are satisfied to rest our case on merit-demonstration.

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn, N. Y.

CAMACHINE



GO AFTER THE PROFITS *INSIDE* YOUR MILL

There are many manufacturers who could find more profit *inside* their mills today than could be found *outside* through increased sales.

Simply by reaping the benefits of cost-reducing equipment!

For example—the Valley-Voith Screw Press shown here. This machine offers many important savings through its . . . .

Low initial cost . . . low upkeep (eliminating entirely the use of felts, wires and auxiliary equipment) . . . small amount of power . . . low labor cost . . . greater capacity . . . and less floor space.

If you are interested in the kind of service which this Screw Press is giving its 15 present users, we should be glad to refer you to any of them.

Your inquiry addressed to the Valley Iron Works Company, Appleton, Wisconsin, will bring you any information you desire.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Western Manufacturing & Sales Division: Smith & Valley Iron Works Co., Portland, Oregon
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

Why you must buy lubrication - not oil

THERE is much more to correct lubrication than quality in oil. It is not enough to know that an oil or grease has high lubricating qualities. The best lubricant in the world, incorrectly used, can cause trouble to your equipment and increase your lubrication costs.

Modern machinery, more complicated in design, requires more certain means of lubrication. Correct lubrication of such equipment calls for a study of individual operating conditions—of each machine—of each unit of equipment.

This is the service that the Standard Oil Company (Indiana) offers you. Our lubrication engineers are trained men. They have studied the lubrication needs of every type of industry. They have been able to effect lubrication improvements in many plants—improvements that have reached far beyond savings in lubrication costs. To assist them in their work they have at their command a complete line of the highest quality industrial lubricants and the co-operation of our great research laboratories.

This service may lead to economies for you. Talk it over with one of our engineers any time at your convenience.

STANDARD OIL COMPANY (*Indiana*)

General Offices: 910 South Michigan Ave. Chicago, Illinois

1426

Chicago	Detroit	Grand Rapids	Joliet	Mason City	Saginaw	South Bend
Davenport	Duluth	Green Bay	Kansas City	Milwaukee	Sioux City	St. Louis
Decatur	Evansville	Huron	La Crosse	Minneapolis	Peoria	St. Joseph
Des Moines	Fargo	Indianapolis	Mankato	Minot	Quincy	Wichita

STANDARD OIL COMPANY (INDIANA) SERVICE

LUBRICANTS FOR ALL INDUSTRY

"If It's *BAKERMADE* Eventually — It Costs Less"

Specialists in Pulp and Paper Mill Machinery since 1881

The Baker Corporation enters its Fiftieth year of dependable manufacturing for the Pulp and Paper Mill Industry. It has never sacrificed, anywhere, the quality of its products. It never will. Its Fifty years have taught it better.

A new device may, here and there, cut a corner, but, like the fruit on a branch, its value is wound in, depends upon, the supporting strength of the tree itself.

In an industry where the great bulk of equipment is highly specialized, where purchases are not made for one, two or three years, a lessening in quality and by the same token a cheapening of product rarely gives value or appreciation—anywhere. It cannot be otherwise.

The death of Mr. Fred H. Baker has brought his organization into new hands. The new management gladly pursuing the fundamentals, built out of years of experience of plant and employes, adds in an aggressive measure of engineering, building and timely service.

A word about prices—lower prices —and still lower prices.

Somehow..sometime..we come to realize..and definitely..that..always..we get..just..what we pay for, neither more nor less..and be it eggs, automobiles, shoes hats or Pulp and Paper Mill machinery. There is..no something..that can come..from nothing. It has..no place..to get it from.....

Baker Manufacturing Corporation

SARATOGA SPRINGS, N. Y.

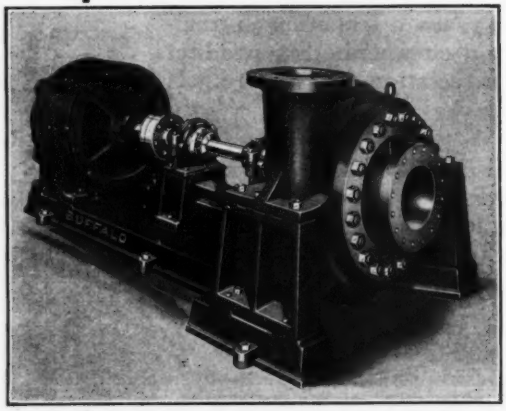
EDWARD B. BAKER
President and Treasurer

FRED MILLHOUSE
Vice-Pres. and General Manager

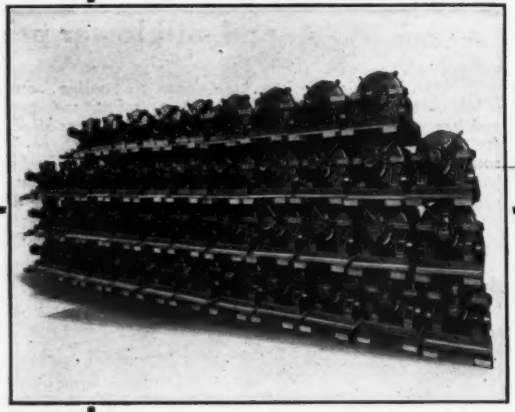
SPECIALISTS

but NOT *in one line!*

This Buffalo Paper Stock Pump is handling 7.18% bone dry raw sulphite stock thru 200 feet of pipe.



This all steel pump is used in a rubber process—1800 G.P.M. 350 lb. suction pressure. Water temperature is about 310° F.



One shipment of Buffalo Pumps to one oil refiner.

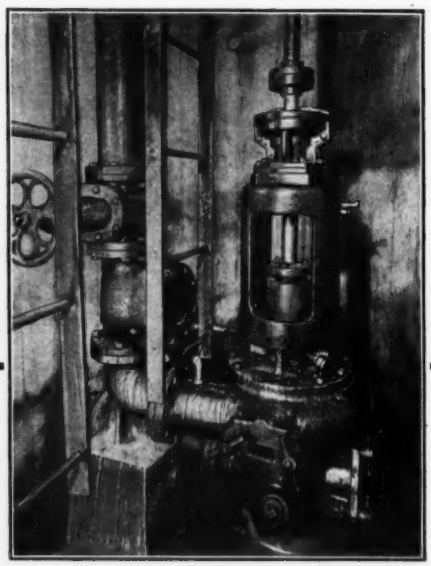
It is comparatively easy for a manufacturer to specialize in one field, devoting all his engineering and production facilities to the perfection of equipment for that field. To excel in more than one of the specialized fields, as "Buffalo" pumps are now doing, requires engineering ability and investments beyond the average.

Do not take our word for our accomplishments. Let us refer you to users in each field.

Buffalo Steam Pump Co.

383 Broadway **Buffalo, N. Y.**

In Canada: Canadian Blower & Forge Co., Ltd., Kitchener Ont.



A non-clogging sewage pump—that is non-clogging.

A GUARANTEE INSTEAD OF A GUESS

YOU can now pay for Penberthy Paper Drier Equipment out of the savings it is guaranteed to make. But to determine whether or not the Penberthy Equipment will be a profitable investment for you, an engineering survey of your present operating costs and conditions is made. You will then receive a proposal embodying a written guarantee that the Penberthy Equipment will effect definite savings. This is based upon the records of a large number of previous installations.

This survey is made under the supervision of your engineers but without expense to you or obligation to purchase the Penberthy Paper Drier Equipment.

This offer is irrespective of the drying system now in use. Almost without exception, the Penberthy Equipment will pay for itself in less than a year.

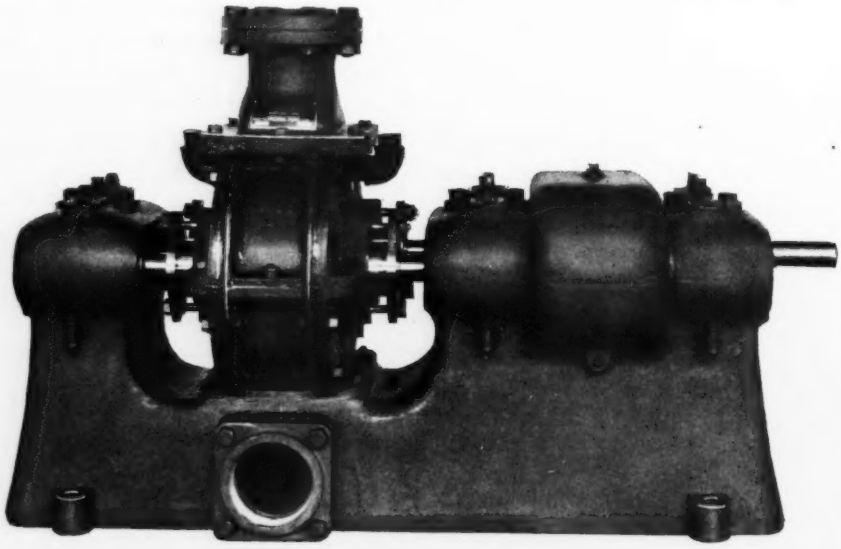
Wire or write for complete information.

PENBERTHY INJECTOR COMPANY
Established in 1886
DETROIT
Canadian Plant: Windsor, Ontario

PENBERTHY PAPER DRIER EQUIPMENT

AN OUTSTANDING WINNER

Predictions Made When This Stuff Pump Was Put on the Market Have Been Fulfilled In Many Mills



One customer writes: "We have operated this pump for about twenty months very satisfactorily with consistencies running as high as 10%. At 6% to 7% the power required is 30 H.P. This pump has not been opened since the first day operated. No repairs made to date. We have many times recommended this pump to others and now have another pump on order with you."

Ask for Complete Information About the Latest Features and Improvements in Design and Material

THE PAPER & TEXTILE MACHINERY COMPANY

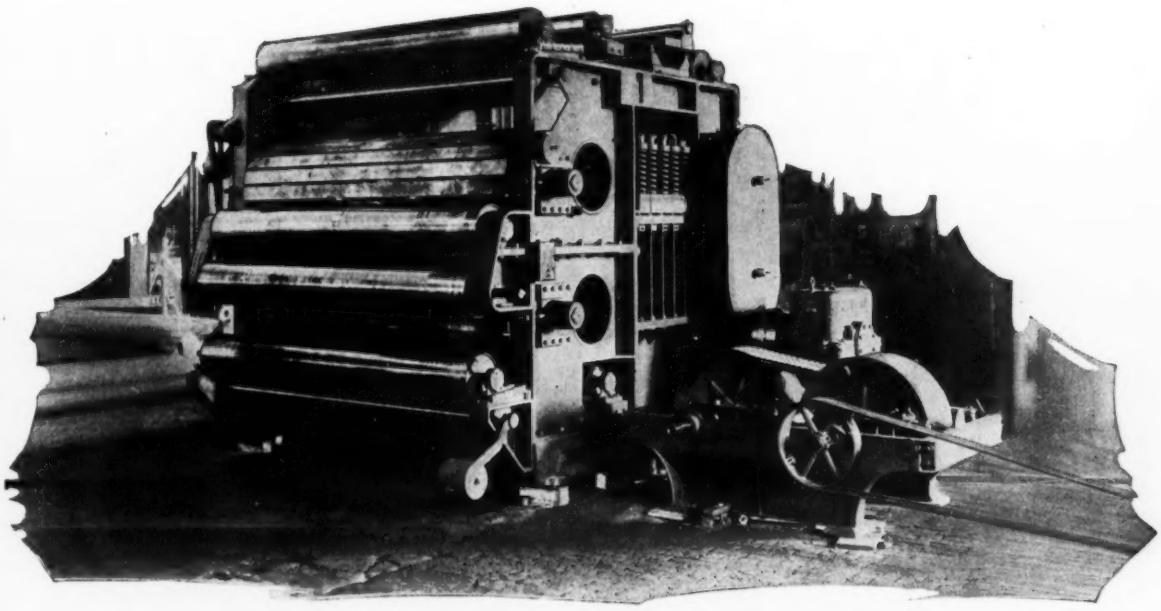
SANDUSKY, OHIO

312 HYATTS Protecting this Fibre Board Machine

Modern paper mill machinery demands bearings of simple construction, yet capable of uninterrupted service, with a minimum of attention. Hyatt Roller Bearings suit these requirements perfectly.

The fact that so many paper and pulp machinery manufacturers are now employing Hyatts as standard equipment is good and sufficient proof that the Hyatt bearing is particularly suited for this application.

Hyattized machines of every sort . . . and the Hyattized motors and shafting which drive them . . . give assurance of longer hours with fewer shutdowns . . . and longer life with less maintenance.



Hyatt-protected fibre board machine . . . designed by Mantius Engineering Company, New York . . . built by Kutztown Foundry & Machine Company, Kutztown, Pa. . . . in service at Wood Fibre Board Products Corporation, Brunswick, Maine.

Hyatt Roller Bearings require only infrequent lubrication, and because of their sturdy construction they have the capacity to take unrelenting punishment while protecting the equipment from shock and friction.

Naturally, then, Hyatts are the logical choice for all modern paper and pulp machinery. Our engineers are ready to serve you with the development of suitable designs.

HYATT ROLLER BEARING COMPANY

Newark Detroit Chicago Pittsburgh Oakland

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

TWENTY-FIVE YEARS

of Service have made Leaders of

LINDSAY WIRES

OUR SPIRAL WEAVE FOURDRINIER WIRES lengthen the life of wires by preventing the grooving of seams.

OUR LONGCRIMP WIRES give 30 to 50% longer service than regular meshes.
Cylinder wires in Brass and Phosphor Bronze for all sizes of Cylinder machines.

THE LINDSAY WIRE WEAVING CO.

COLLINWOOD STATION **CLEVELAND, OHIO**

CHEMICAL AND MECHANICAL PULP

BLEACHED SULPHITE

Kellner-Partington Paper Pulp Co. Ltd.
Sarpsborg, Norway—Edsvalla, Sweden
Hallein and Villach, Austria

UNBLEACHED SULPHITE

Cellulosefabriks A.—G., Bratislava, Cecho-Slovakei
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Svanö Aktiebolag, Svanö, Sweden
Aktieselskabet Greaker Cellulosefabrik, Greaker, Norway

KRAFT PULP

Nensjö Cellulosa A.—B., Sprängsviken, Sweden
Bergvik och Ala Nya Aktiebolag, Söderhamm, Sweden
Munksunds Aktiebolag, Munksund, Sweden
Kalix Traindustri Aktiebolag Vanafjarden, Sweden

Selling Agents

J. ANDERSEN & CO.

21 EAST 40th STREET NEW YORK

WAYAGAMACK KRAFT PULP

CANADIAN KRAFT LTD.

THREE RIVERS, CANADA

Sulphite Pulp—Paper and Board
J. & J. Rogers Co.,
Ausable Forks, N. Y.

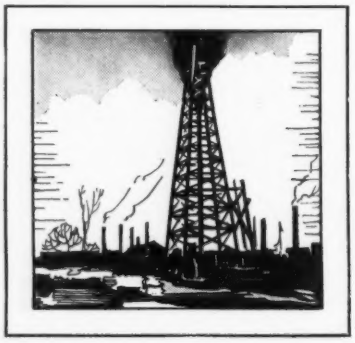
Bleached Sulphite — Bleached Soda Pulp
Howard Smith Paper Mills, Ltd.
Cornwall, Ont., Canada

Selling Agents

THE PULP & PAPER TRADING CO.

21 EAST 40th STREET, NEW YORK CITY

. . She Gushes! . . Oil!

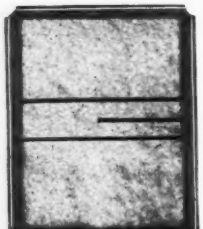


THAT cry, which has since made a thousand millionaires, was heard for the first time in August 1859 when "w i l d c a t t e r s" brought in the first oil well in the United States at Titusville, Pa. It was a little more than a year before this time that Asa Shuler and J. W. Benninghofen formed a partnership to manufacture paper making felts.

This partnership still exists among the descendants of these two men and they are making felts which embody all the experience gained in these seventy years and three generations of experience.

Naturally Hamilton Felts are better felts. It would be strange indeed if they were not. It is this experience that dictates the entire process of making these felts which combine strength with great water removing qualities; that save in steam and coal costs; that wear longer and produce better paper with less down time for washing; that make money for the wise manufacturer who uses them.

But the test of a Hamilton Felt is in your mill on your machines. For purposes of comparison take your hardest one — put on it a Hamilton Felt, and give it the hardest test of use and performance you think a felt ought to have. Don't spare it. You'll come back and want these better felts on all your equipment.



Hamilton Felts are marked by two blue lines full width of the felt and by one shorter blue line midway between them.

Ask the Hamilton Felt man who is a practical paper maker as well as a felt expert the next time he calls. Tell him your problem. He'll have a felt for you that will meet it exactly. Most likely he calls on you reguarly, or you can write to us direct.

Shuler & Benninghofen, Hamilton, Ohio

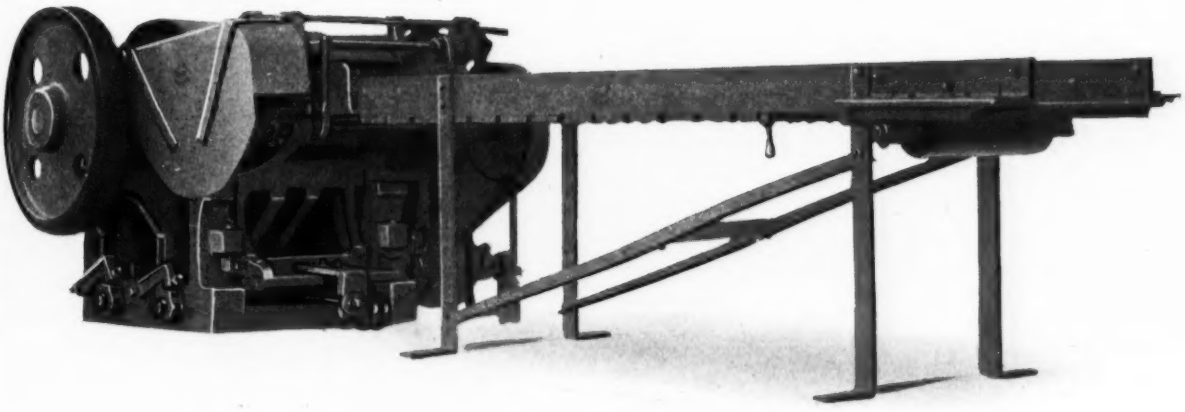
The Miami Woolen Mills

Established 1858

Hamilton Felts

TAYLOR, STILES & COMPANY
GIANT
REG. U.S. PAT. OFF.
RIEGELSVILLE, N.J. U.S.A.

RAG CUTTERS



The Latest No. 20 Multiplex "Giant" Cutter

Capacity 5 Tons per Hour

Main Bearings S.K.F. Roller Type
Direct Connection to Motor Thru Shearing Flexible Coupling
Improved Overhead Swung Feed
All Small Bearings Bronze-Graphite Bushed
And Alemite Fitted

Economical of Power **Easy of Adjustment** **Built for hard, continuous Service**

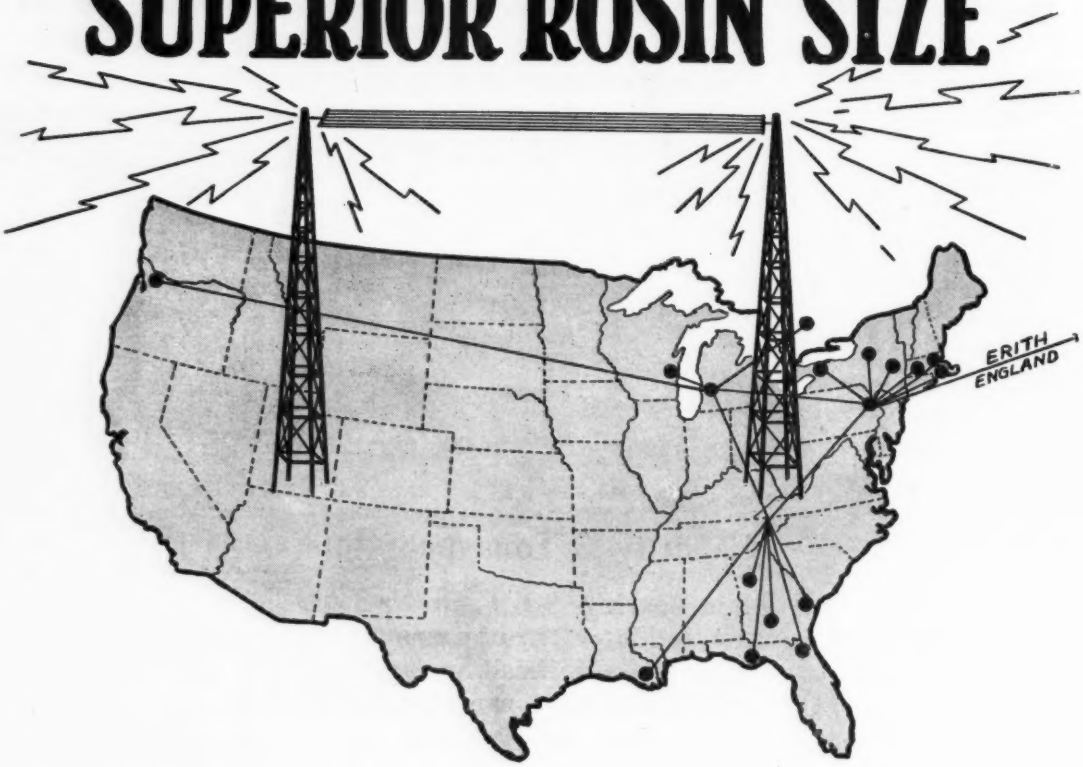
PULP SHREDDERS
DISC CHOPPERS
LITTLE "GIANT" PAPER SHREDDERS
ROLL BARS
BED PLATES
RAG CUTTER KNIVES

TAYLOR, STILES & COMPANY
RIEGELSVILLE, N. J., U. S. A.

Waterous Engine Works Co., Ltd.
Brantford, Ont., Canada
Canadian Representative

R. J. Marx
133 Finsbury Pavement,
London, E. C. 2
Sole Agents for Europe

BROADCASTING SUPERIOR ROSIN SIZE



With the starting of operations in our new factory at Portland, Oregon, we complete a *coast to coast* and an International *"Hook-up of Stations"* for supplying SUPERIOR ROSIN SIZE and other chemicals.

Service will be good from your *"Local Station"* and your 1930 *"Program"* will be free from *"Static"* if you use SUPERIOR CHEMICALS.

TUNE IN WITH P. M. C.

PAPER MAKERS CHEMICAL CORP.

EASTON, PA.
KALAMAZOO, MICH.
NORTH MILWAUKEE, WIS.
HOLYOKE, MASS.
STONEHAM, MASS.
BOSTON. MASS.

ALBANY, N. Y.
LOCKPORT, N. Y.
CARTHAGE, N. Y.
PORTLAND, OREGON
PENSACOLA, FLA.
JACKSONVILLE, FLA.

SAVANNAH, GA.
FARGO GA.
ATLANTA, GA.
MARRERO, LA.
BURLINGTON, ONTARIO
ERITH, ENGLAND

Detailing construction of these and their many companion Fisher Specialties this Fisher Catalog becomes a handbook on pressure control. Copies sent when requested on business stationery.

Steam Pump Governors
[10 to 10,000 lbs.]
Boiler Feed Pumps
Fuel Oil Pumps
Vacuum Pumps
Receiver Tank Pumps
Pump By-Pass Valves
electric and power driven pumps
Reducing Valves, Pressure
Regulators
for all pressures—liquids, gases, steam
Differential Pressure Regulators
Vacuum Regulators
Strainers
pipe, suction and drip pocket
Liquid Level Controllers
direct and remote type
Lever Valves
air, gas, or liquid
Float Valves
Fluid Mixers
Hydraulically Operated Valves
Relief Valves
Back Pressure Valves
Steam Traps—Air Traps—
Gasoline Traps—Grease Traps
Exhaust Heads
Steam and Oil Separators
Drip Pockets
Vapor Pressure Controllers
for oil storage tanks
Boiler Gas Fuel Governors
Gas Engine Fuel Regulators
Automatic Gas Relief Valves
Gas Pressure Regulators
main and house service
Liquefied Petroleum Gas
Regulators
for gas cylinders
Gas Water Traps

The Fisher Type 1 Pump Governor—"daddy" of a complete line that meets even unusual conditions

Not on Design Alone—but on Sheer Goodness

Making its bow to industry in the year 1881, this type of Fisher Steam Pump Governor has furnished a basis of design for many competing products.

Yet sales of Fisher Pump Governors show no evidence of competition.

For engineers apparently recognize the supremacy of Fisher construction just as they recognize the supremacy of Fisher design.

Each Fisher Governor is built to meet the specifications of individual orders.

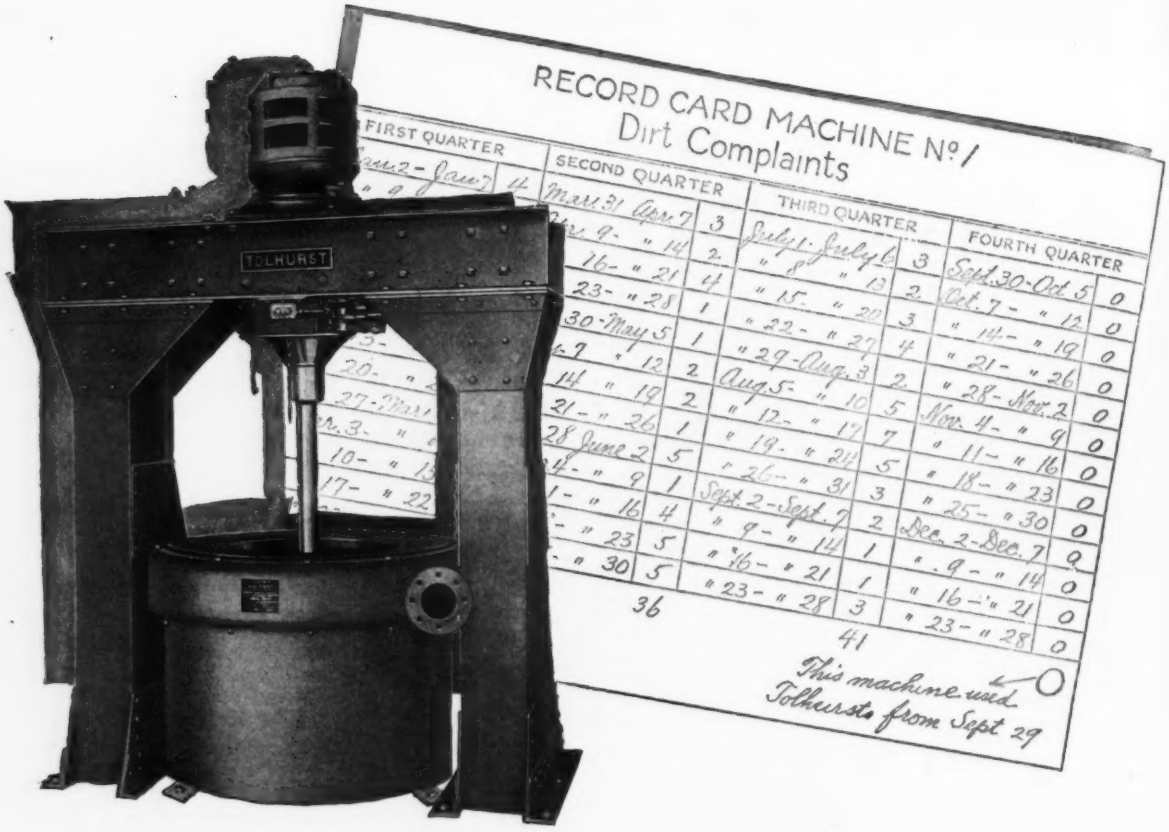
Valves are ground into seats under actual working temperatures and pressures.

A wide range of trim including monel metal, stainless steel, Duromite and Fiscometal, not to mention a wide range of valve bodies, are available to meet every conceivable temperature and corrosive condition.

Because of these things, all know that once a Fisher Governor is installed it is ready immediately to go to work—and to keep everlastingly at it without calling for help or constant attention.

THE FISHER GOVERNOR COMPANY, Inc.
2200 Fisher Building, Marshalltown, Iowa

FISHER



not a single DIRT COMPLAINT *in three months*

A quarterly report on one of the first installations of Tolhurst Paper Stock Centrifugals shows that not a single Dirt Complaint has been registered on paper from this machine.

With this evidence — with the knowledge that the Tolhurst makes possible truly clean paper — why wait for others to install Tolhursts before possessing these advantages yourself?

This machine is made under license of the Centrifugal Engineering and Patents Corporation, holders of the Erkensator Patents.

DESIGNED AND BUILT BY SPECIALISTS

TOLHURST MACHINE WORKS, INC.
TROY, N. Y.

New York Office: **30 Church St.** ***Chicago Office:*** **8 So. Dearborn St.**

The TOLHURST CENTRIFUGAL

CUTTING OVERHEAD

By Installing WEBSTER CONVEYORS

The Consolidated Paper Co., Monroe, Michigan, recently installed Conveyors for handling bales of paper; size of bales 3x3x6 feet, 1000 pounds each.

This installation consists of

2 Slat Conveyors, 570 feet long, 60 inches wide.

3 Revolving Dust Screens, 8 ft. diameter, 38 feet long.

17 Belt Conveyors, 18-30-42 inches wide, capacity 300 tons per day.

Saving on handling $4.00 to $5.00 per ton.

FIFTY YEARS

EXPERIENCE

Designing and

Manufacturing

QUALITY

CONVEYING

EQUIPMENT

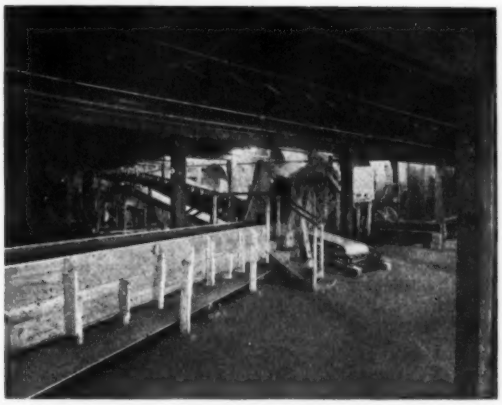
A few of Our Products

Apron Conveyors
Belt Conveyors
Chain Conveyors
Spiral Conveyors
Trolley Conveyors
Gravity Conveyors
Bucket Elevators
Skip Hoists
Sheet Metal Work
Structural Steel
Coal and Ashes
Handling Equipment.

The Webster and Weller Mfg. Companies have a staff of 100 engineers trained in solving material handling problems. Each man is a specialist in his line.

This staff is at your command to help in the solution of your conveying problems—Perhaps we can show you a saving.

— WRITE US —



THE WEBSTER & WELLER MFG. COMPANIES

1820-1856 N. KOSTNER AVE. **CHICAGO, ILLINOIS**

Offices in the Principal Cities ***Five Manufacturing Plants in U. S. and Canada***

OXFORD
PAPER COMPANY

PAPERS OF SUPERIOR QUALITY

OXFORD SUPER CALENDERED BOOK

OXFORD ENGLISH FINISH BOOK

OXFORD LITHOGRAPH

OXFORD TABLET

OXFORD POLAR COATED

OXFORD NORTH STAR COATED

OXFORD DULL FINISH COATED

OXFORD FOLDING COATED

EXECUTIVE OFFICES
230 PARK AVENUE
NEW YORK

WESTERN OFFICE
35 EAST WACKER DRIVE
CHICAGO

You reduce accident hazard . . . with this SLIP-SAFE Floor

ADDRESSING the Eighteenth Annual Safety Congress, Mr. M. J. Mullen, of the Nekoosa-Edwards Paper Co., Port Edwards, Wis., stated that "J-M Industrial Flooring is the best type of floor where water is used for cleaning—it is not slippery when wet." *

Every plant manager and superintendent must realize the importance of this because at the same meeting the startling fact was presented that in one period, 18,092 falls, causing 220 deaths and 2,676 cases of permanent injury were recorded. 48% of these were the result of falls on slippery floors. Floors were shown, therefore, to be the first point of attack against avoidable accidents.

Many of these accidents never would have happened if J-M Industrial Flooring had been there to guard against them.

In addition to safety, this floor has other important advantages. It is smooth and wear-proof—forming a monolith into the far corners—water-tight, fire-resistant and always free of ruts and holes. J-M Industrial Flooring is a "made to order" floor. Its composition is varied to meet special conditions in your plant—tough but resilient for heavy traffic—or softer for the tread of feet. In foundry or office, in machine shop or chemical room, it resists every use and abuse which tends to injure it.

An interesting booklet has been prepared to describe, in detail, how this floor can prevent accidents, save money and provide more efficient and healthful working conditions everywhere. Send for it.

* *The Paper Industry—October, 1929*

JM Johns-Manville
INDUSTRIAL FLOORING

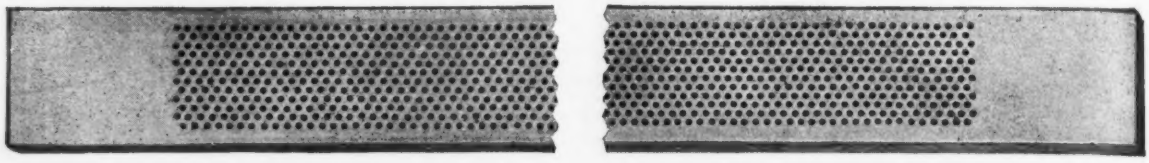
Address JOHNS-MANVILLE
At nearest office listed below
New York Chicago Cleveland San Francisco Toronto
(*Offices in all large cities*)

Please send me a copy of the J-M Industrial Flooring booklet —"What More Could You Expect of a Floor?" B-98

Name.....
1F-99-2
Address.....

LAWSON PAPER MILL SPECIALTIES

Suction Box Covers	Wood Cogs	Beater Paddles
Coating Sticks	Trimmer Sticks	Paper Winding Cores
Jordan Wood Fillings	Beater Wood Fillings	Friction Blocks
Beater Scrapers	Doctor Blades	Guard Boards
Hand Trucks	Broke Cars	Roll Dollies



LAWSON ROCK MAPLE SUCTION BOX COVERS

FURNISHED IN ALL LENGTHS UP TO 24 FT.

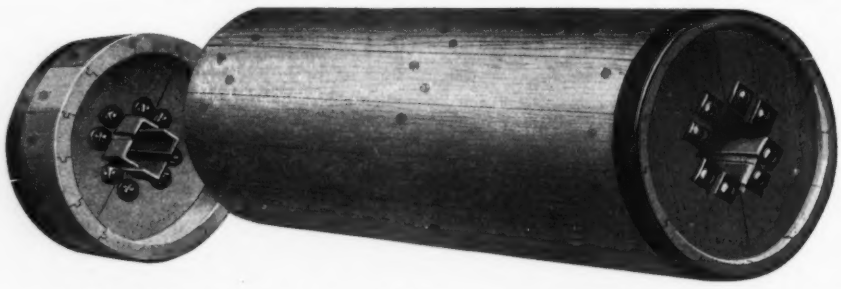
ONLY SELECT PERFECT WOOD USED—All stock used for Lawson Suction Box Covers is close-grained, sound and live Rock Maple of the choicest quality—carefully selected by our own men right in the woods—free from birdseye, checks, knots, rot and all slight imperfections. Our own logging crews procure a higher quality and choicer grade of lumber than is obtainable in the open market.

We can furnish to advantage clear stock for making your own Suction Box Covers, if you prefer, either in the rough plank or dressed to size. We can also furnish clear stock for guard boards, doctor blades, lip boards, etc. In supplying such material it is furnished with an absolute guarantee that every piece shipped will be of suitable quality for the purpose intended.

* * * * * *

THE NEW LAWSON DRUM-KORE

Eliminates loss from wrinkled and curled paper at beginning of roll



Large diameter, 7½" to 12" and larger

All Lengths

Extreme Light Weight for ease in constant handling.

Great Strength due to unique construction insures long life.

For both square and round shafts. For round shafts suitable collars are furnished.

MENASHA WOOD SPLIT PULLEY COMPANY

MENASHA WISCONSIN

Manufacturers of Reliable Paper Mill Supplies Since 1886

Try this test—it will pay you.

Make up an entire stack with Butterworth super-quality calender rolls and see how long they run without requiring turning down or refilling. Do this and you'll always use

Butterworth Calender Rolls.

It is not just one feature

that makes Butterworth Calender Rolls last longer, but a number of features, such as the use of the best obtainable cotton, husk, or paper—the hammered steel heads and shafts—the taper wedges . . . . Care in making is important, so is the fifty years of experience and finally the scientific tests to which every roll is subjected before being shipped.

The same care and quality of materials are built into all rolls *refilled by Butterworth.*

H. W. Butterworth & Sons Co.

Established 1820

PHILADELPHIA, PA.

Plants at Philadelphia and Bethayres, Pa.

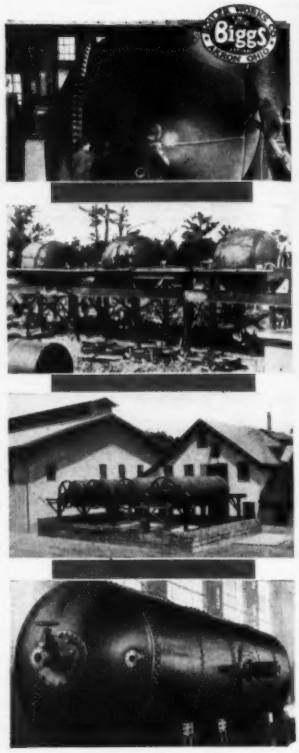
NEW ENGLAND OFFICE:
Turk's Head Bldg., Providence, R. I.

SOUTHERN OFFICE:
Johnstown Bldg., Charlotte, N. C.

IN CANADA
W. J. Westaway Co., Hamilton, Ont.

BUTTERWORTH *Calender* ROLLS

This 14-foot rotary digester was built by Biggs for Special process operation at the plant of the Sylvia Paper Board Company, at Sylvia, N. C. All seams were electrically welded. Test, 225 pounds. The welding is done under Biggs procedure control, and has been approved and accepted by all important insurance companies for high pressure construction.



Riveted or Welded Equipment Built and Erected by Biggs is Now Used All Over the World for Cooking and Bleaching Straw, Grass, Bagasse, Wood Fibre, Cotton Linters, and Other Materials Used in Manufacturing Paper, Boxboard, Strawboard, and Similar Paper Products.

Biggs Welded Vessels are accepted for installation in localities where the A.S.M.E. code has been adopted for unfired pressure vessels.

Biggs now offers you all-welded rotary, tumbling, sulphate and sulphite digesters, as well as other vessels in all-welded construction. The Biggs perfected welding process by which they are produced is the consummation of four long years of research and development. Biggs Welded Vessels insure you the utmost ***uniformity***, ***safety***, and ***reliability***.

The Biggs weld is stronger than the plate itself. Biggs Welded Vessels have been accepted and approved by all the leading insurance companies without references to size or working pressure. Biggs All-welded Digesters and similar equipment built by Biggs are being accorded the same confidence as has been enjoyed by Biggs riveted construction throughout the paper and allied industries.

A reputation of more than 40 years' standing is squarely behind every Biggs welded vessel. Biggs' complete erecting service is also at your command. Whether your requirements are for welded or riveted types, for globe, cylinder, tumbling or stationary digesters, Biggs' experience and facilities will prove most valuable to you. Our story is sketched pictorially in our newest folder, "Unusual Steel Plate Construction." May we send you a copy?

THE BIGGS BOILER WORKS COMPANY
East Buchtel Avenue Akron, Ohio

AMONG BIGGS INSTALLATIONS ARE:

Akron Paper Co., Akron, Ohio
American Straw Board Co., (10 plants), Akron, Ohio
Antioch Paper Co., Antioch, Calif.
Australian Paper Mills, Sydney, Australia

Ball Bros. Co., Noblesville, Ind.
Beckett Paper Co., Hamilton, Ohio
Beloit Box Board Co., Beloit, Wis.

California Paper & Board Mill Co., Antioch, Calif.
J. G. Cherry Co., Tama, Iowa
Cleveland-Akron Bag Co., Cleveland, Ohio
Celotex Company, New Orleans, La.
Consolidated Water Power & Paper Co., Appleton, Wis.

Diamond State Fibre Co., Bridgeport, Pa.

Empire Paper Co., Vincennes, Ind.
Fuji Paper Co., Tokio, Japan
Fir Tex Insulating Board Co., St. Helens, Ore.
Fibre Board Products, Inc., Stockton, Calif.
Fox Paper Co., Lockland, Ohio

Herman Garbe, Shanghai, China
Hinde & Dauch Paper Co., Sandusky, Ohio
Hinde & Dauch Paper Co., Fort Madison, Iowa
Harriman Co., Harriman, Tenn.
John H. Heald Co., Lynchburg, Va.

International Alcohol Corp., Fullerton, La.

Kalamazoo Paper Co., Kalamazoo, Mich.

Marshall Paper Co., Turner Falls, Mass.
Marshall Bros., Inc., Yorklyn, Del.
Montreal Paper Co., Sorel, P. Q.
Maizwood Prod. Co., Des Moines, Ia.

North Star Mfg. Co., Coffeyville, Kansas

Roanoke Fibre Board Co., Roanoke Rapids, N. C.
River Raisin Paper Co., Monroe, Mich.

Standard Paper Mfg. Co., Richmond, Va.
Sylvia Paper Board Co., Sylvia, N. C.
Southern Extract Co., Knoxville, Tenn.

Peter J. Schweitzer, Elizabeth, N. J.
Port Huron Sulphite & Paper Co., Port Huron, Mich.

United Paper Board Co., New York City

Weis Paper Mill Co., Quincy, Ill.

The Biggs BOILER WORKS CO. AKRON OHIO TRADE MARK REGISTERED

TANKS AND GENERAL
STEEL PLATE WORK
for the Chemical and Metallurgical Industries

The Tolhurst Machine Works

and the

Bird Machine Company are the

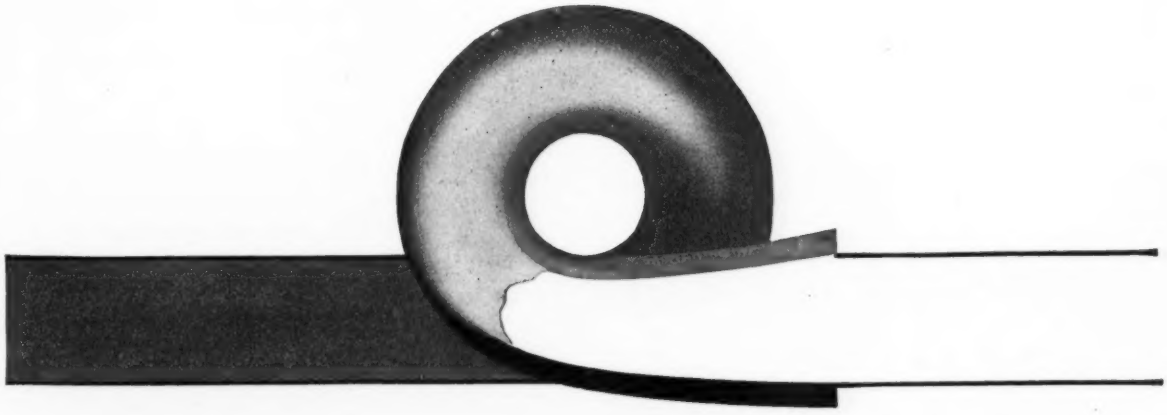
SOLE LICENSEES

of The Centrifugal Engineering & Patents Corp.

Centrifugal separators made by the Bird Machine Company and the Tolhurst Machine Works, under licenses based on the Erkensator Patents, have proved remarkably successful.

These patents are valuable. They represent years of development and large expenditures. In addition to existing patents, other applications of importance are pending. In the event of infringement, the Centrifugal Engineering & Patents Corp. will consider it a duty to protect their patents and their licensees.

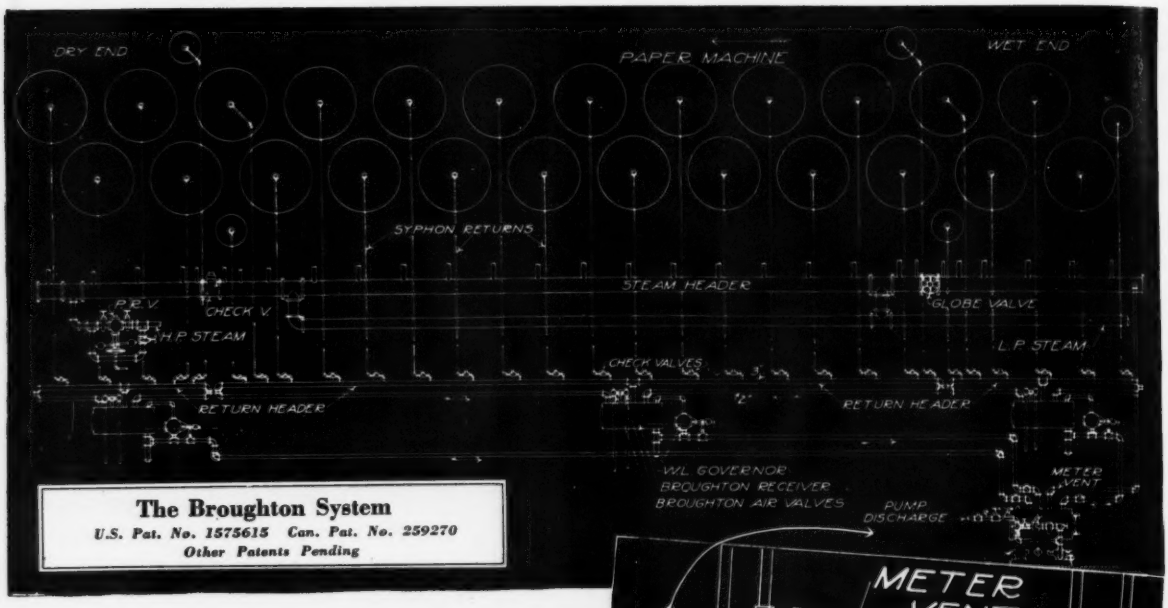
The Centrifugal Engineering & Patents Corp., 15 Exchange Place, Jersey City, N. J.

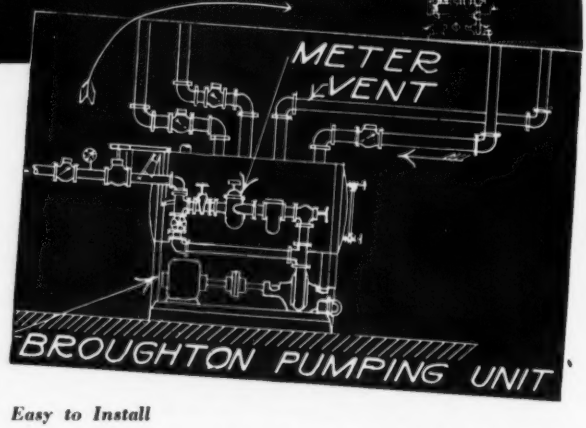


FOR THE CLEANEST PAPER THAT CAN BE MADE

USE CENTRIFUGAL SEPARATORS

3770





The Most Natural Drainage System for Paper Machines in Existence

The Broughton Drainage System is different from any known scheme or system in existence. It replaces all forms of re-circulation, individual traps and vacuum pumps, ejectors, orifices and mechanical dippers.

Complete Evacuation of Water

Condensation occurring in dryers shuts off the steam flowing into the syphons and return header. Radiation immediately drops the pressure in these lines, and draws the water up and over the syphon bend and into the return header, where it flows by gravity to the Broughton condensation pump and metering unit. The swing checks in the syphons allow each dryer to have its own individual pull. The return header pressure is always equivalent to that of the dryers, assuring a condensate temperature to the power house equal to the steam pressure. The Broughton condensation pump and metering unit will deliver this water to any point desired and at any temperature without the use of any cooling medium. It will operate at any allowed pressure and meter with an accuracy of 99%. The water line governors permit nothing but water to flow into the receiver of the pumping unit. This receiver is equalized to the lowest pressure feeding into it.

Elimination of Air

Specially constructed, thermostatically controlled Broughton Air Valves automatically release all air rapidly so that the largest paper machine can be started from cold to full drying capacity in less than twenty minutes. This complete evacuation of all air is the reason for the extreme operating flexibility of all paper and board machines equipped with the Broughton System.

Economy

Only that steam is used in each dryer that is consumed for drying and radiation. No blow thru or recirculation is permitted. No mechanical external power of evacuation is required. The condensate is removed at the same temperature as the steam in the dryers, no drop in pressure or reflash being allowed. The Broughton System permits the use of less steam per pound of water evaporated than any other scheme or system in existence.

Operating Pressures

The Broughton System will permit the use of the lowest possible operating pressure as governed by machine heating surface, ventilation and speed of production. The system can be built for one pressure throughout or for any number of pressures, as desired.

Easy to Install

The Broughton System can be completely installed during the week and cut over on Sunday, no shut-down being necessary.

Prices

Due to its extreme simplicity and low cost of installation, the cost of the Broughton is well within the reach of any mill, regardless of size.

Users

There are more than one hundred and fifty successfully operating Broughton Systems in the United States and Canada. A few representative jobs are as follows:

Inland Empire Paper Co.	Spokane, Wash.	3 Systems
Cascade Paper Co.	West Tacoma, Wash.	2 "
Paraffine Companies	Emeryville, Calif.	2 "
Fibreboard Prod. Co.	Los Angeles, Calif.	2 "
U. S. Gypsum Co.	Gypsum, Ohio	1 "
U. S. Gypsum Co.	Oakfield, N. Y.	1 "
U. S. Gypsum Co.	N. Kansas City, Mo.	1 "
Marathon Paper Mills	Rothschild, Wisc.	3 "
Marathon Paper Mills	Menasha, Wisc.	2 "
Marathon Paper Mills	Ashland, Wisc.	1 "
Wausau Paper Mills	Brokaw, Wisc.	4 "
Dells Pulp & Paper Co.	Eau Claire, Wisc.	3 "
Watab Pulp & Paper Co.	Sartell, Minn.	2 "
Waldorf Paper Products	St. Paul, Minn.	2 "
Kimberly Clark Co.	Kimberly, Wisc.	1 "
Kimberly Clark Co.	Neenah, Wisc.	2 "
Laurentide Company	Grand Mere, P. Q.	7 "
Pejepscot Paper Co.	Brunswick, Maine	2 "
Hollingsworth & Vost Co.	East Walpole, Mass.	3 "
Longview Fibre Co.	Longview, Wash.	2 "

Write for complete information.

HEALY-RUFF CO.

804 Hampden Avenue
St. Paul, Minnesota

Broughton Systems

PAPER MAKING MACHINERY

THE UNDERCUT
PAPER MILL TRIMMER

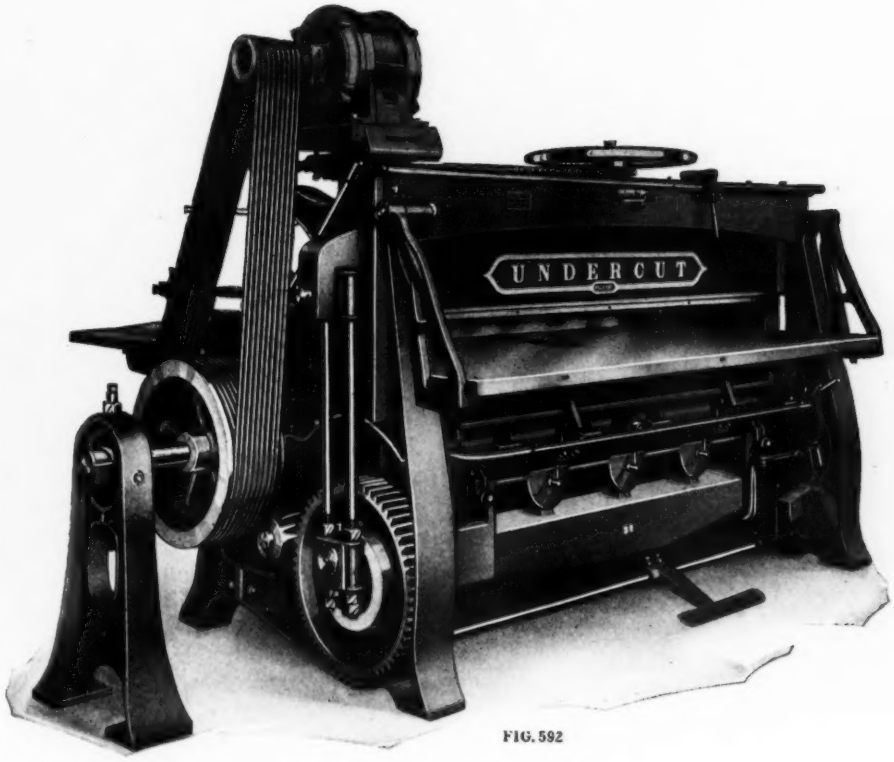


FIG. 592

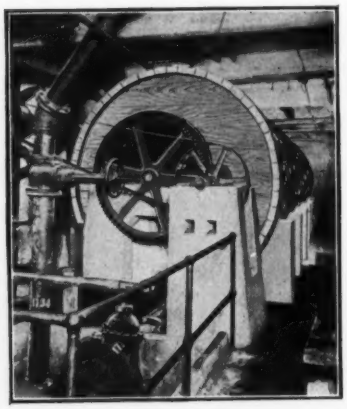
Illustration 76, 84, 92 inch Sizes
Made also in 34, 38, 44 and 48 inch Heavy, 56, 63 and 69 inch Sizes to meet your need.

FOURDRINIER AND CYLINDER MACHINES—
—THE "RAINSTORM" SHOWER PIPE

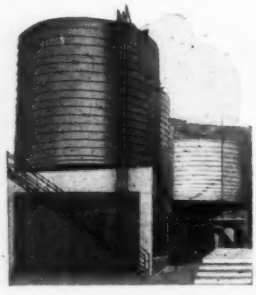
The Smith & Winchester Manufacturing Co.
—1828— SOUTH WINDHAM, CONN. —1930—

PAPER BAG MAKING MACHINERY

STOCK CHESTS OR ACID TANKS



Made of selected tested woods. Sixty years experience catering to the needs of the paper mill has fitted us to recommend and manufacture the correct type of wooden tank for any service.

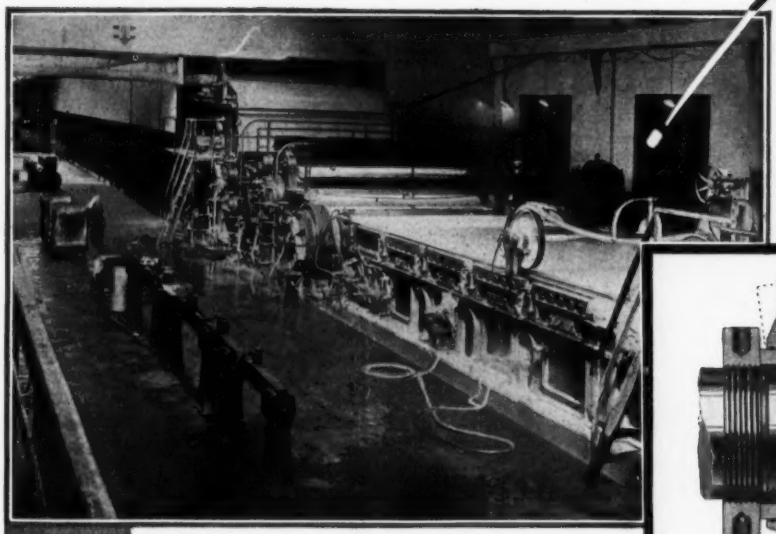


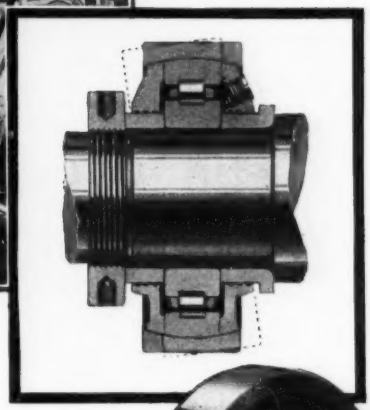
Send us your inquiries
Write for catalog.

THE HAUSER-STANDER TANK CO.

CINCINNATI, OHIO

Where ~ SHUT-DOWNS ARE COSTLY





EVERY mill man knows what an hour's shut-down costs, on a machine like this. At the Three Rivers Mill of the St. Lawrence Paper Co., Ltd., they are safeguarded against bearing troubles on the breast rolls and wire rolls, by NORMA-HOFFMANN Precision Roller Bearings.

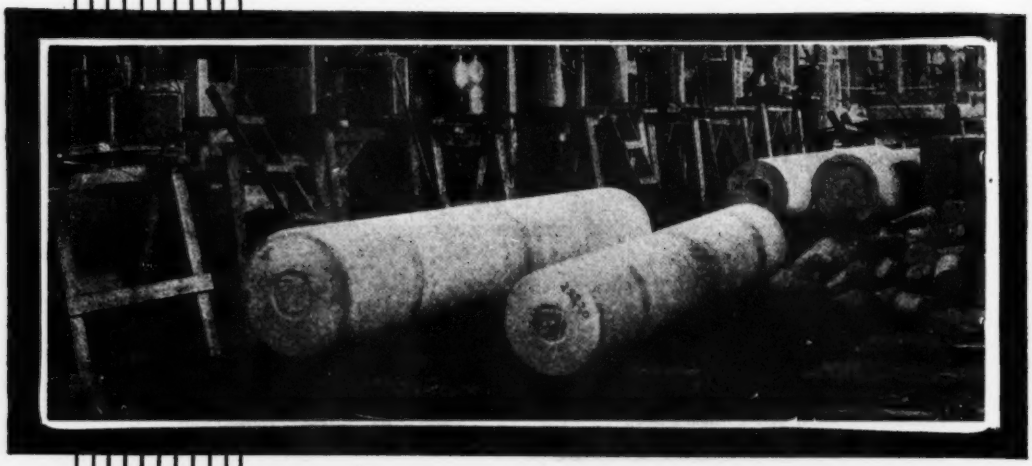
Wholly enclosed, self-aligning, practically friction-free, these PRECISION units reduce the drag on wires and prolong wire life — thereby helping maintain production, reduce replacements, and save power.

Our engineers have had a wide experience in the application of NORMA-HOFFMANN Precision Bearings to paper mill machinery. Why not let them work with you, toward a betterment in service in your machines?

NORMA-HOFFMANN Bearings carry the breast rolls and wire rolls in this machine of the St. Lawrence Paper Co., Ltd., in its plant at Three Rivers, Province of Quebec.

NORMA-HOFFMANN PRECISION BEARINGS

NORMA-HOFFMANN BEARINGS CORPORATION STAMFORD, CONN., U.S.A.



BARRE GRANITE PRESS ROLLS

Recognized throughout the industry as the best rolls to use

Barre Granite Press Rolls are noted for their high quality, and the great length of time they retain the smoothness of their surface. They are indisputably the best rolls to use for results—for long satisfactory service. Mill superintendents everywhere will tell you of their quality and other outstanding features.

Barre Granite Rolls are revolutionizing the whole paper industry.

Write for details and complete information.

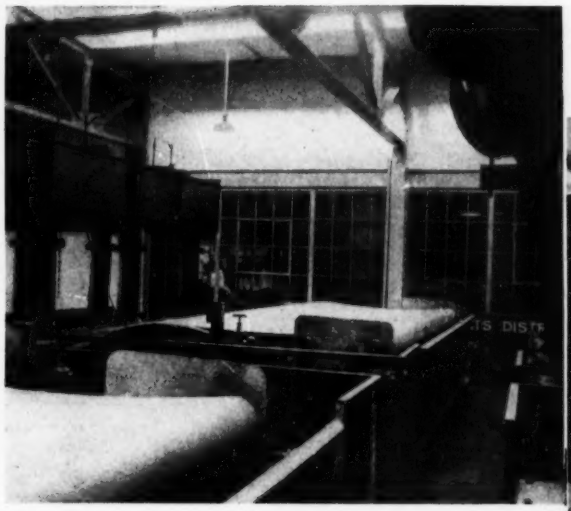
JONES BROTHERS COMPANY

BARRE, VT BOSTON, MASS.

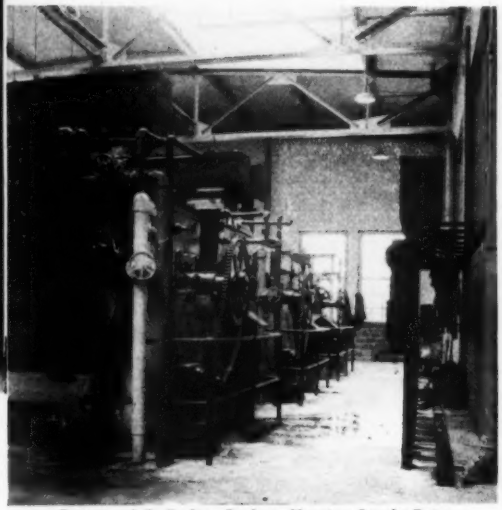
ANOTHER LARGE FEINC INSTALLATION

Maine Seaboard Company Purchases Duplicate Installation of Mersey Paper Company

8 FEINC GROUND WOOD DECKERS AND 2 FEINC SULFITE-WHITE WATER SAVEALLS



Horizontal String Discharge of Sheet Deep Submergence Machines



Battery of F. E. Inc. Deckers Showing Sturdy Drive

The low fibre loss in ground wood white water enables Mersey to vent any desired amount of white water to maintain system low in dissolved organics insuring constant color of finished sheet and freedom from slime. The Deckers at Mersey have not been steamed!

Cost of Thickening with FEINC Deckers beats all former records!

Write our nearest office for details.

IN CANADA
FILTRATION ENGINEERS, LTD.
MONTREAL, QUE.

SAULT STE. MARIE, ONT.
P. O. BOX 974

W. J. WESTAWAY CO. LTD.
HAMILTON AND MONTREAL
(SEWAGE DISPOSAL)

IN EUROPE
MASCHINENFABRIK IMPERIAL
G. M. B. H.
MEISSEN, GERMANY

FILTRATION ENGINEERS INCORPORATED
SERVICE FE ECONOMY
General Offices and Plant
NEWARK -:- NEW JERSEY

CABLE ADDRESS
"FEINC—NEW YORK"

WOOLWORTH BLDG.
NEW YORK, N. Y.

355 EVERETT ST
PORTLAND, ORE.

1135 MISSION, ST.
SAN FRANCISCO, CALIF.

CONTINUOUS FILTERS-DECKERS SAVE-ALLS-WASHERS FOR PAPER PULP

SAVINGS

are yours for the asking

Back in NINETEEN TWENTY-FIVE we inaugurated and established a method of selling NEWPORT Wood Rosin on a strictly *net-weight* basis. Since then we have enjoyed the hearty support of rosin consumers who had long awaited just such a progressive move.

The idea has proven economically sound as testified by the ever growing demand.

Substantial savings are also at YOUR disposal.

A Newport Product
Therefore Unexcelled

Sold the World Over by

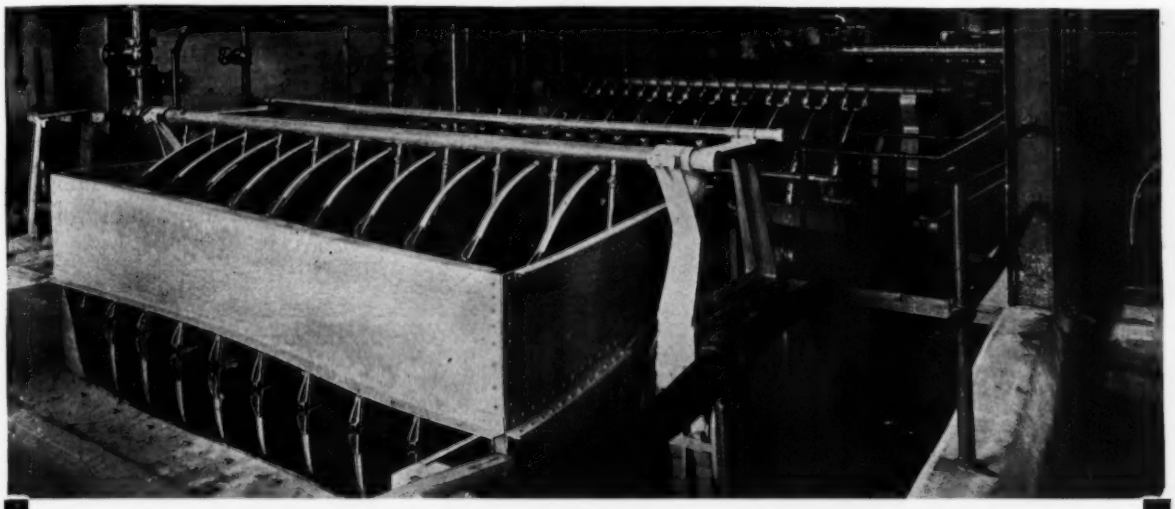
General Naval Stores Company

Incorporated

NEW YORK CINCINNATI CHICAGO
PHILADELPHIA NEW ORLEANS MINNEAPOLIS

The oldest and largest organization in the world exclusively engaged in Selling "Steam Distilled Wood Turpentines," Pine Oil and Wood Rosin.

What The Fall Months—



Have Brought in the Way of Shipments of Oliver United Equipment

FROM September 1st to December 31st, shipments to paper mills in the United States, Canada and other countries involved the following equipment:

18 Deckers
6 Save-Alls
5 H. D. Thickeners
13 Bleach Washers
3 Kraft Washers
4 Lime Mud Filters
1 Board Machine

These shipments step up the total installation of Oliver United equipment to around 600 units.

This consistently climbing curve in the sales chart clearly indicates the growing appreciation of the operating and investment value of Oliver United equipment for paper mills.

OLIVER UNITED FILTERS INC.

JOHANNESBURG E. L. Bateman
TOKYO American Trading Co., Inc.
MELBOURNE Fyvie and Stewart
HONOLULU W. A. Ramsay Co.
MANILA The Edward J. Nell Co.

Factories: Oakland, Calif., Hazleton, Penna., Peterboro, England
Cable Address: OLIUNIFILT

TIMMINS, ONTARIO B. D. Kelly
HALLE, GERMANY Wilhelm Lill
SCHEVENINGEN, HOLLAND and SOERABAIA, JAVA Van Lelyveld and Co.
RECIFE, BRAZIL Ayres and Son

SAN FRANCISCO Federal Reserve Bank Building
NEW YORK 33 W. 42nd St.
CHICAGO 565 Washington Blvd.
LONDON 150 Southampton Row
PARIS T. L. Genter, Concessionaire 63 Ave. des Champs Elysées

The Base of KROMEPATCH is—

Chrome Ore

CHROME ORE belongs to the Spinel Group of Minerals. It is opaque; crystalline in structure, and brownish black to iron black in color.

The distinctive advantages of Chrome Ore are:—High Fusion Point, Chemical Neutrality and Structural Strength. Chrome Ore when properly prepared is one of the very finest and most useful refractory materials known.

"KROMEPATCH" is Chrome Ore, properly prepared to meet the widest variety of furnace conditions.

KROMEPATCH—The Multi-Bond Refractory Cement is shipped DRY in steel containers holding 200 pounds each. It develops a strong bond at all temperatures without fluxing; has a high hot load strength; does not crumble or squeeze out of the joint, and may be troweled, dipped, sprayed or poured.

Because it is so neutral chemically, KROMEPATCH is used for laying Chrome, Magnesite, Silica, Diaspore or Fire Clay Brick. KROMEPATCH is an excellent coating material. Brushed or sprayed on walls it greatly retards penetration of corrosive gases and fluxes.

KROMEPATCH is also a most effective bonding cement to use with ground brick bats or other granular materials for patching and monolithic construction.

E. J. LAVINO AND COMPANY
REFRACTORIES DIVISION
CHROME, MAGNESITE AND SILICA REFRACTORIES
BULLITT BUILDING PHILADELPHIA

Pioneers in Chrome Refractories

Distributors in all Principal Cities

New plant unit for F. J. Kress Box Company at Pittsburgh. Designed and built under the Austin Method of Undivided Responsibility.

1930 . . . *Modernization Year in Industry*

ALL signs indicate that the industrial concern which comes to the end of this year without a completely modernized plant or plants will be more seriously handicapped than ever in doing a profitable business.

To many concerns, this urgent program will mean a complete new plant . . . perhaps in an entirely different location, more favorable with respect to markets, sources of supply, labor.

Branch plants or warehouses, strategically located, will be the answer for some. Revamping of or extensions to present facilities will serve for others.

Austin can help you plan this program and carry it through to satisfactory and economical completion just as it has done for many of the nation's industrial leaders from Coast to Coast.

Broad engineering experience, nation-wide organization, and extraordinary facilities enable Austin to give helpful counsel and quick action on any project, large or small. Austin will build from your plans or cooperate with your engineers.

Under the Austin Method of Undivided Responsibility the complete project—design, construction and building equipment—is handled by this one organization which guarantees in advance:

1 *Low total cost for the complete project*
2 *Completion date within a specified short time*
3 *High quality of materials and workmanship*

Phone the nearest Austin office, wire or send the memo.

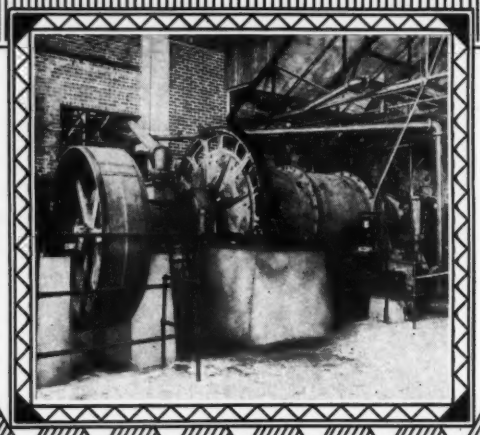
THE AUSTIN COMPANY

Engineers and Builders • Cleveland

New York Chicago Philadelphia Newark Detroit Cincinnati Pittsburgh St. Louis Seattle
Portland Phoenix The Austin Company of California Ltd.: Los Angeles, Oakland and San Francisco
The Austin Company of Texas: Dallas The Austin Company of Canada, Limited

Memo to The Austin Company, Cleveland— We are interested in a.....project containing.....sq.ft. Send me a personal copy of

☐ "The Austin Book of Buildings." Individual..... Firm.....City.....PTJ 2-20-30



Why discard your Rag Waste

THERE is no need of discarding the rag waste from continuous beating systems in board mills when a Marcy Rod Mill will convert it into valuable paper stock at a very low power cost per ton.

This waste is charged to the Marcy Rod Mill in a tangled mass of rags, rope, string, wire, shoes, rubber, wood, bottles, and other refuse found in unsorted paper. After pulping this mass in a Marcy Rod Mill separation is simple, while before it was impossible. The pulp is carried off while the heavy "junk" settles out.

One 5′ x 10′ Marcy Rod Mill with 80 H.P. will convert 4 tons of this waste material into high grade paper stock in 24 hours. It permits the paper manufacturer to utilize material which he now throws away.

This additional production at such a low power cost per ton will quickly pay for the installation of a Marcy Rod Mill. May we make a survey of your plant and show you how you can improve your stock and reduce your manufacturing costs through the use of a Marcy Rod Mill? No obligation, of course.

The MINE and SMELTER SUPPLY COMPANY

MARCY MILL DIVISION

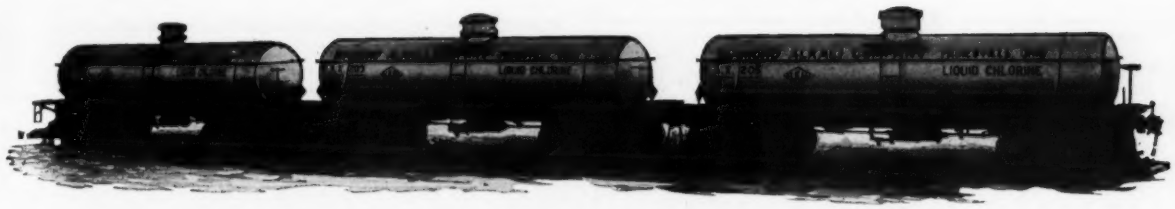
Licensee under the Marcy Rod Mill Patents

DENVER, COLORADO
1422-17th Street

NEW YORK CITY
225 Broadway

Manufactured in Canada by
WILLIAM HAMILTON, LIMITED.
PETERBOROUGH, ONTARIO

MASSCO



DIAMOND LIQUID CHLORINE

Processed by the latest and most approved methods of manufacture, Diamond Liquid Chlorine is a product in which you can place the utmost confidence.

This new Diamond product is available through the centrally located Diamond plant at Painesville, Ohio, in any quantity to meet your requirements.

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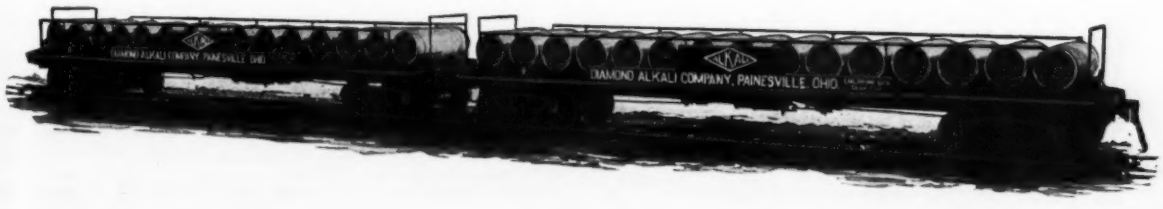
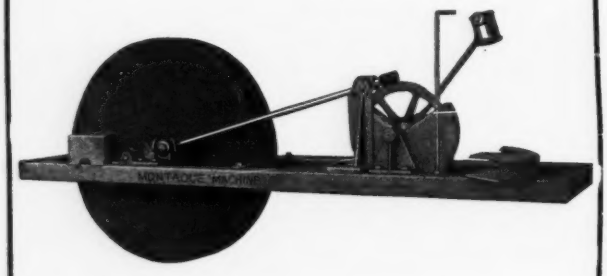
PITTSBURGH, PENNA.



Automatic White Water Sampler

(Patent applied for.)



The liquid to be sampled furnishes the driving power. The Sampler is therefore self-contained and costs nothing for power to operate.

The Sample which it gives is truly composite, telling an authentic story day in and day out of white water conditions, information of the highest importance and value to progressive Mill Managers.

Steadily coming into more widespread use wherever paper is made.

Ask for Bulletin W-1.

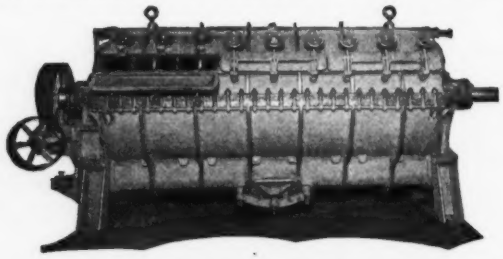
Montague Machine Co.

Turners Falls, Mass.

PULP RECOVERY

from black liquors at least 3½ pounds per thousand gallons, by the use of

VALLEZ
ROTATING LEAF FILTERS



Evaporator capacity is increased. Maintenance and labor costs are kept down. Green liquors are cleared of ash and other impurities. Lime is removed and reclaimed from the white liquor.

Vallez Filters give 100% efficiency in the removal of solids on a single filtration. Rotation of the filter leaves makes possible utilization of entire filtering surface to maximum capacity. Sluicing off is accomplished thoroughly within the filter. It is never necessary to remove the leaves for washing, or to open the filter during operation.

J. & G. HEAVY DUTY ROTARY VACUUM FILTERS

Continuous in operation and require a minimum of supervision. Self-discharging; self-cleaning; work automatically. Have high capacity on lime sludges and white waters. Also used as washers and thickeners.

J. & G. Quadruple Effect EVAPORATORS and CONCENTRATORS

Especially designed to give high capacity and concentration on black liquors.

Our engineering department will gladly submit recommendations, complete equipment data and estimates to meet your specific problems. Write for catalog.

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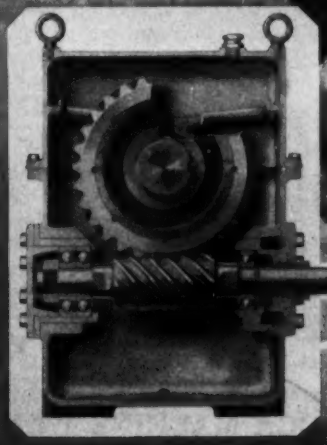
De Laval Worm Gear



A Superior Speed Reducer for High Speed Motors driving Slow Speed Machinery. 11⅓ ratio gear between a 1160 RPM. 40 HP. motor and a vacuum pump.

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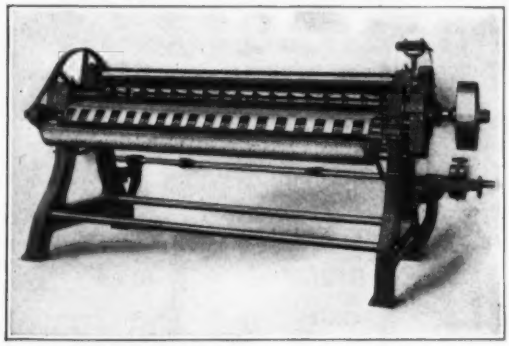
Noted for
Production
Precision,
Economy,
Ease of Operation,
Safety.

Equipped with Pasting Device



Rolls can be made without perforations if desired.

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Capable of producing 70 or more cases of crepe paper towels, junior or senior size, in 8 hours

An engineered product, with high quality workmanship, and smooth operating. Can be furnished with integral 1 H.P. Motor Drive or open pulley.

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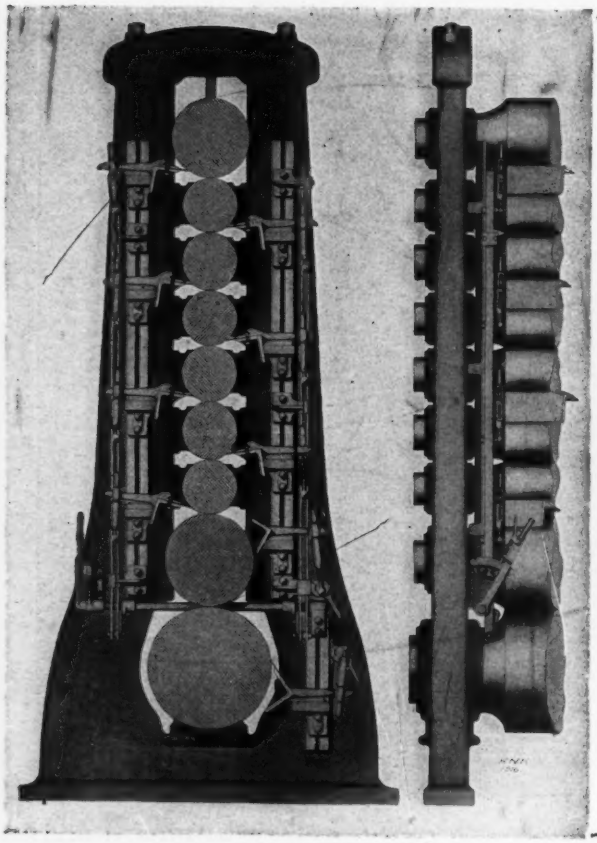

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With Flexible Blades, Universal Adjustment and Control

Patented in United States, Canada, Great Britain, France, Germany, and Other European Countries.

The Doctors can be operated into or off working position by limited rocking motion controlled by hand lever which locks all Doctors by latching into adjustable quadrant. The pressure applied on Doctors is evenly distributed over every inch of every Doctor by means of universal connection of Doctors with adjustable quadrant and hand lever, the Doctor being properly balanced so as to assure easy operation. The flexible blades conform to the rolls giving perfect doctoring effect with minimum pressure. Doctors may be operated on continuously without scoring or injuring the polished surface of the rolls. Individual Doctors may be unlatched and rocked away from the rolls for cleansing purposes without interfering with universal control of other Doctors. Doctors are constructed of steels, light and strong, and may be fitted to any type of paper machine calender.

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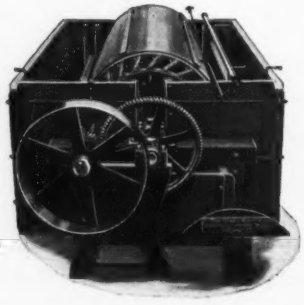
EASTERN REPRESENTATIVE

A. D. WOOD MACHINE

Application No. 4

WHITE WATER SAVEALL



Application No. 5

WATER FILTER

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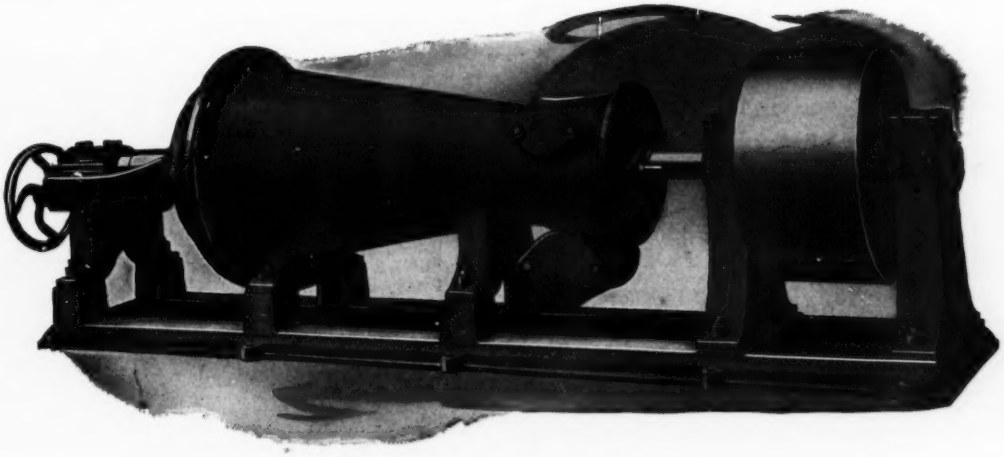
The FILTER screens 4,000,000 gals. per day. Built in various sizes. Bulletins gladly sent.

OVER ONE HUNDRED YEARS OF SUCCESS IN DESIGNING AND BUILDING MACHINERY FOR MAKING FINEST GRADES OF PAPER IS A RECORD WARRANTING YOUR CONSIDERATION WHEN DECIDING ON NEW EQUIPMENT.



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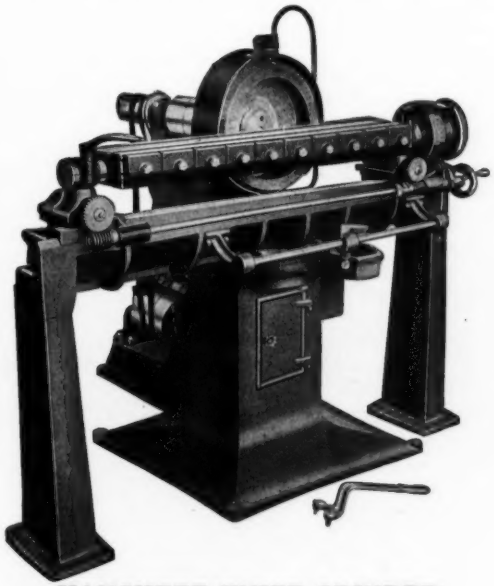
THE SMITH & WINCHESTER MFG. CO.,

SOUTH WINDHAM, CONN.



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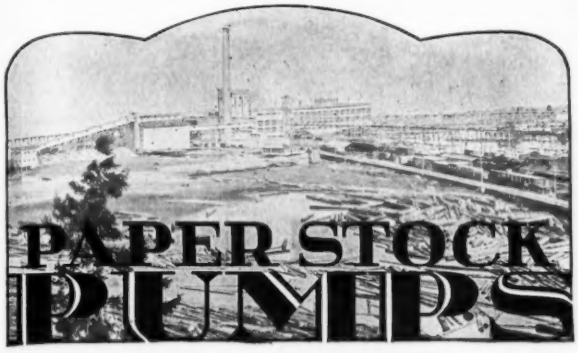

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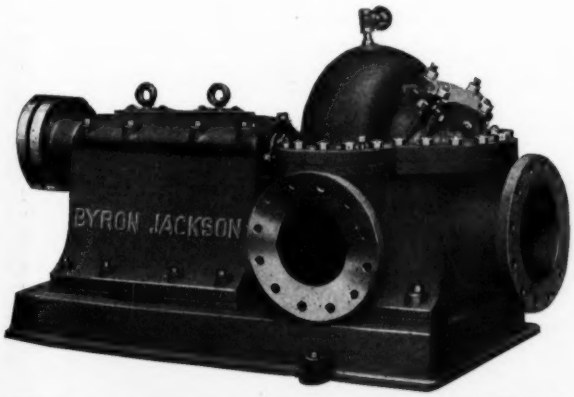

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CENTRIFUGAL PUMPS FOR EVERY SERVICE

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-EIGHTH YEAR

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TABLE OF CONTENTS

Copyright, 1930, by the Lockwood Trade Journal Co., Inc.

Paper Industry Experiences Irregular Year	69
New Forestry Building at Syracuse	73
Book Paper Conditions Practically Unchanged	74
Year of New Records in News Print Industry	75
Coarse Paper Survey for 1929	77
Heavy Demand for Paper Making Chemicals	79
Fine Paper Industry Has Fairly Prosperous Year	80
Paper Board Industry Has Unprofitable Year	82
Chemical and Mechanical Pulp Markets Steady	86
Box Board Production in January	87
Paper Stock Demand Unsatisfactory in 1929	88
Murals in New Crown-Zellerbach Building	89
News Print Industry Expands in Canada	90
Japan Progresses in Paper Making	93
Output 44 Per Cent Over 1928	93
Ontario Industry Had Satisfactory Year	94
Pulpwood Consumption and Pulp Production	95
Reforestation in New York	98
Dinners During Paper Week	99
Manufacturers of Paper Meet	107
Technical Association Meets	127
Technical Association Papers and Reports	131
National Paper Trade Association Meets	271
Editorial	**276**
Newfoundland's Paper Industry	277
Pennsylvania Mills Extend Production	279
Col. E. M. Irish Retires	281
Farewell to W. L. Nixon	281
Ontario Mills Moderately Active	283
To Build Power Plant	285
Construction News	287
How Russia Supplies Pulpwood	289
Power Plant Section	**291**
H. P. Carruth Made Vice President	299
Imports and Exports of Paper for December	301
Building Biggest Kraft Mill	303
Imports of Paper and Paper Stock	305
New York Market Review	**309**
Miscellaneous Markets	**311**
Market Quotations	**313**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 325, 326, 327, 328

Established 1886

GROWTH

In the 1929 Convention Number of this paper we reported greatly increased sales of WOOD PULP and CHEMICAL tonnage over the previous year, and the addition of many new clients. We are proud to report again a continued expansion of our business together with the addition of new sources of supply, which we are happy to feel will assist us in the improvement of our service to our numerous clients.

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